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THE BOSTON
Medical and Surgical
JOURNAL.

A Practitioner's Handbook OF **MATERIA MEDICA AND THERAPEUTICS**

BASED UPON ESTABLISHED PHYSIOLOGICAL ACTIONS
AND

The Indications in Small Doses.

TO WHICH IS ADDED

Some Pharmaceutical Data

AND

THE MOST IMPORTANT THERAPEUTIC DEVELOPMENTS
OF SECTARIAN MEDICINE AS EXPLAINED
ALONG RATIONAL LINES.

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TO
THE OPTIMIST IN THERAPEUTICS
BY
THE AUTHOR

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PREFACE.

The modern tendency towards more direct and less bulky medication has placed in a transition stage the drug therapy of to-day. New synthetics, elegant pharmaceuticals, and mixtures and compounds more or less ethical, are being introduced faster than the profession can keep pace with them.

Certain excesses always accompany a forward movement. This little book is an exhortation to pause and consider, and is an attempted rational restudy of the *materia medica* with the two main points in view of emphasizing what is really important as regards the employment of drugs in their *larger* dose, and, more especially, of directing scientific and clinical attention to the employment of drugs to meet their indications in *small* doses.

Attempting to exploit no pathy, ism, or fanciful theories, the effort is made to gather together what is of practical account in the recorded investigations of all schools of practice bearing upon the clinical use of small doses of the drugs suitable for such employment. The infinitesimal dose will not be considered, and the theories involved concerning such attempts at medication need be but slightly touched upon.

The neglect of this subject by laboratory investigators, most of our clinical teachers and our physiologists, makes it imperative to draw considerably upon the mass of more or less valuable sectarian literature. This has been done in as nearly a judicial spirit as possible. There are so many instances where all three schools of medicine substantially agree upon the indications that the task is not so difficult as might appear upon the surface. Where such an agreement is not obvious, divergent views will be carefully weighed, and whatever data appears to possess the most substantial chemic, physiologic, and clinical foundation will be given preference over anything of a theoretic nature.

This is a series of studies, and is not a treatise; a volume of suggestions, and not one of principles. It presupposes a knowledge of the established *materia medica* and rational therapeutics, and presents from the standpoint of a seasoned "regular" what he apprehends we and all physicians, regardless of school, are coming to recognize and practice as common ground.

Full of imperfections a study of this nature must necessarily be. So much data is empiric; so much is based upon clinical observations and provings with too much of the subjective; some is contradictory, and much more is inadequate; but the refinements of physical and physiologic science are having their effects upon therapeutics.

In the Materia Medica section, the author accepts conditions as he finds them, and must, perforce of circumstances, give a sectarian setting to what he is endeavoring to give in a non-sectarian spirit. Pharmaceutic matters are considered impartially and as having no legitimate sectarian phases.

Most of the literature upon the small dose in therapeutics is built up upon that which has preceded it. The fathers of medicine dwelt much upon this problem. It has been quite impossible to determine the real author of much of the data used in the preparation of this volume. Many books, both regular and sectarian, have been consulted, and the author acknowledges a large debt of obligation.

Harrisburg, Pa., January, 1907.

INTRODUCTION.

The employment of drugs in ordinary or in large doses for their physical, chemic, or physiologic action is a procedure so well established in therapeutics, and so well borne out in the common experience of all ages, that a defence of such a rational use of remedies is not necessary.

The question of the natural limitations of such a line of therapy is a pertinent one, however. From time to time new theories have arisen, tending either to limit or to eliminate such a use of drugs. These theories or systems of therapeutics usually possess some degree of truth and one-sided merit, but they unite in a superlative elaboration of the symptomatology of disease processes as a guide in the selection of the indicated remedy, and they minimize the known physiologic actions as an indication towards the selection of the proper drug to meet the pathologic change underlying the symptomatology. Like the systems and theories of other branches of science, these well-meant efforts need not meet with pedantic condemnation, especially since certain abuses and overstatements have been corrected and our therapeutics tempered by reason of the discussions engendered by them.

What, then, are the limitations naturally surrounding our use of remedies in the usual doses of the books and for their generally recognized physiologic actions?*

First, as regards the mechanical action of remedies little need be said, since there is substantial agreement as to such indications. The wonderful advances in surgery and mechano-therapy have rendered unnecessary many of the old procedures, and advances in drug therapy have largely eliminated mechanical emesis, bulky protective agents, demulcents, escharotics, and diluents.

Chemically considered, a wide field is opening up. The physiologic chemist has pointed the way to much of therapeutic value. Antacids, antilithics, and the oxidizing agents constitute

* The question of the natural limitations of the *small* dose is quite as important as is that of the large dose. It is to be hoped that all physicians who employ remedies for their actions in small doses may never be so attracted by the arguments in favor of such procedures as to neglect the rational and eminently necessary use of the large doses when they are indicated.

In view of the distressing emergencies confronting the practician so frequently and because of the marked sthenic character, or the malignancy of many cases of illness, it would be folly to uniformly depend upon small doses.

the grosser chemic instances in therapy, but Rademacher, Grauvogel and the more recent investigators have been eager to give a chemic basis to much of therapeutic import.

The "Biochemic" theories of Schuessler open up a promising field worthy of more conservative investigation. At present, the studies he has made concerning the lack of various tissue salts in certain diseased conditions have been given a vitiated application by very "high potency" enthusiasts. Naturally, it requires a fairly tangible amount of any substance to supply a chemical deficiency, and even if the "law of similars" be admitted to apply in other directions, it is evident to any chemist that the tissue salts do not operate within such limitations.*

Schuessler is probably correct in some of his deductions, and the administration of material doses of his remedies constitutes an accessory to other treatment worthy of intelligent observation and studious employment. The various salts of calcium, potassium, iron, magnesium, sodium, and silica should have a well defined place as tissue foods.

The recent advances in chemic physics prompted by the investigation of radium and radioactive substances, and proving that molecules or atoms are not the ultimate subdivisions of matter, put us very much "at sea" as to some problems of vital chemistry. There may be many things undreamed of in our erstwhile chemic philosophy. If, after all, it is the electron and not the molecule that is active, we have been adding an excess of reagent to the human test tube in the reactions we endeavor to bring about by many of our drugs.

It is quite probable that an overwhelming dose of any remedy given for a chemic action is very seldom indicated except to antidote poison or to neutralize acids or alkalies. Iron, arsenic, phosphorus and other drugs act only in minute doses with any kindliness at all, and an excess is eliminated, unchanged, or but

* The so-called "high potencies" are not based upon any tangible laws of physics, nor upon true chemical philosophy. "Potentizing" or "dynamizing" a drug through a line of attenuations is a theory at present given but limited application in the school of its origin. The author has given true Homœopathic $3x$ dilutions strictly according to their indications and compared results with his own admixture of 1 part of the mother tincture with 999 parts of alcohol. The therapeutic results have been identically alike. The same has been done with ix and $2x$ dilutions.

It is very rarely that any substance used in medicine will give tangible results in doses less than 1-1000 grain, or 1 grain of a $3x$ trituration. A $3x$ trituration in which one grain of the crude drug is contained would require of milk sugar sufficient to weigh eleven times as much as does the earth. Very few Homœopaths exceed the $6x$ with toxic drugs or the $3x$ with the ordinary run of drugs.

slightly changed. An excess of drug is liable to become an irritant and interfere with the elimination of the products of retrograde tissue metamorphosis. As an instance, it may be said that the salts of mercury induce the same general results, varying in the time element as regards their dissociability or according to the *degree of minuteness of their absorbable particles.**

Many authorities claim that the chemic actions of drugs are much more prominent than their so-called vital actions. It is not always the more gross chemic action of acid and base, oxidation or interchange, but rather a certain affinity of the drug for some form of living protoplasm. When such drug action is sought, it is well to remember that *in large dose most active drugs may be classed as poisons to a certain degree and that most poisons act upon a narrow area in minute doses but extend this area in large doses.*

This proposition cannot be too strongly emphasized, and certainly if our therapeutics is ever to become direct and definite, we desire drug actions limited to very definite and direct indications.

Right here an important distinction must be made. *The chemic action of drugs is quantitative rather than qualitative, while the vital action is qualitative rather than quantitative.* As a general proposition, there are a few exceptions to this statement, but yet it very largely covers the case and applies to small dose therapy with peculiar force, in that when we give a remedy for its ultimate chemic action, the dose is a most important element and we must most carefully adjust that dose to the demands of the tissues we desire to reach and not give sufficient to overstep this narrow area and influence other tissues that might be harmed thereby. A small dose of a drug may act upon the medulla, but in larger dose extend its action to the cord and the cerebrum. Even protoplasmic poisons which paralyze any structure if exhibited in large quantity, yet invariably influence some special organ more particularly. This is a general rule in chemic reactions and cannot be safely deviated from in chemic therapeutics. Therefore, "a shotgun prescription" may contain only one substance if it is in too large dose and is consequently aimed at sev-

* It is estimated that it is possible to physically divide one grain of a substance into one hundred million particles by solution or by long continued trituration; therefore, one grain of an 8x trituration can theoretically contain one particle of the drug. Division into molecules is not regarded possible by most physicists, either by solution or by trituration.

eral organs instead of one. As we have drugs whose primary or direct actions in small doses cover a wide field, there is comparatively little occasion in routine practice to impose upon debilitated and chronic cases the large doses so useful in emergency and so often necessary when immediate results are imperative.*

Regarding the proposition that the vital action of drugs is qualitative rather than quantitative, the practical outcome is that the important matter in selecting a remedy for its vital action is to *select the right drug*. The dose should be the least amount meeting the indications adequately. Some of these doses will be large, but the majority need be but small.

The action of the fluids of the body upon drugs administered should ever be kept in mind. A great many are carried to the liver and destroyed or modified before they can influence the tissues at large to any appreciable degree; or they are detained in the liver and gradually escape into the system. This well-known fact suggests that nature is wiser than we are in the selection of remedies and expects the liver to nullify the effects of our misdirected medication, or that we should not administer in large doses the substances this organ intercepts.

The study of the vital or the physiologic actions of drugs is one so involved as to present peculiar difficulties. Prof. Cushney tells us that "Pharmacology is the study of the changes induced in living organisms by the administration in a state of minute division of such unorganized substances as do not act merely as foods . . . or, the study of the organism rendered abnormal by drugs."*

* In order to attain satisfactory results with remedies for their indications in small doses, very discriminating diagnosis is absolutely essential. When we give doses so small as to get only the primary action of a drug, we do not get the general effects upon the system noted in the action of large doses. In most instances, overwhelming drug action is not to be desired, but if one expects success with small doses he must weigh carefully the pathology and symptomatology of each individual case. It is not successful when one is prescribing *at the name of some disease*, but the results are eminently satisfactory when the patient in all his bearings is prescribed for and then carefully watched. Care should be taken in estimating the subjective phenomena not to lay undue emphasis upon pain.

One needs to learn a good deal over again and attain familiarity with data to be elicited from careful inspection of the tongue, pulse, mucous surfaces, superficial vessels, eyes, the appearance of the skin, etc. It is well to learn how to use a few drugs for a few definite indications and then add gradually to one's stock of well-digested information.

It will soon surprise an erstwhile routine prescriber how soon he begins to note the little things in diagnosis and drug action and to relieve conditions in which he had previously failed.

* Arthur R. Cushney, M.D., "A Textbook of Pharmacology and Therapeutics." Lea Bros. & Co., Philadelphia.

The study of these changes is sometimes made with healthy men as the subjects, but usually the lower animals are employed. The data secured are principally objective. Homoeopathic drug provings are practically studies in pharmacology, but they are made exclusively upon healthy human subjects and by the internal administration alone. The data secured are largely subjective, but in part objective. In both methods very material doses are employed. It is very much of a question just how far our therapeutics should be influenced by either one of these methods. Both are partial and may lead to equally fallacious reasoning.

In a laboratory it is very convenient to employ the lower animals for experimentation, and the data secured possess a certain scientific value, but it demands no argument to prove that additional experiments upon man are necessary before a clinical significance can be attached to them. Somewhat unfortunately, the pharmacologists convey the impression that only the more recent laboratory views of therapeutics are worthy of consideration, while the practical men in their round of visits get the impression that pharmacology is the science of destructive criticism as applied to drugs. Pharmacology is destined ultimately to place upon a more certain basis much of our practice, but as yet it is altogether too academic to ride roughshod over established therapeutic procedures rendered definite by the bedside observations of thousands of careful practitioners. The influence of a drug upon a sick man may be very different from the action of the separated active principle hypodermatically administered to a healthy frog or guinea pig.

On the other hand, pharmacology emphasizes one of the important sides of therapeutics practitioners are inclined to neglect, when it insists that we do not give drugs simply to influence diseased organs directly, but rather to influence healthy ones, since that action is the more certain one. In part, the idea is most excellent. In cardiac valvular lesions we cannot restore the valve, but we can influence the healthy heart muscle with our drugs; and in kidney diseases we can rest these organs by stimulating the skin; but we cannot make the intestines digest proteid, the medulla conduct the functions of cerebration, the spleen look after the glycogenic function, or the motor nerves conduct sensory impulses. As to the action of remedies themselves, we ob-

serve that most antipyretics reduce temperature in fever but not in health, the bromides inhibit convulsive action in epilepsy, but do not depress healthy brain tissue. Such data could be given quite *in extenso*, much to the discouragement of pharmacologic theories.

Homœopathic drug provings possess more scientific value than is accorded to them in regular medicine. They are verified characteristics of drugs determined by most self-sacrificing investigation upon the part of many individuals of varying temperament. They are the complement of laboratory data upon physiologic actions of drugs. It takes both of these methods, tempered with the data secured from the ranks of the clinicians, to arrive at a working scheme of physiologic actions. *Such a combination idea of physiologic actions is the real basis of most successful practice in all schools of medicine.* After one has been for years engaged in active practice and has learned the more important end of therapeutics, an honest introspective inquiry will show to any physician other than a hopeless routineist, that he takes the subjective element into account nearly as much as he does the objective in prescribing for his patients. A successful man *must* do so.

In prescribing for objective symptoms the larger doses of remedies are usually more generally requisite than in prescribing for subjective symptoms. For instance, very minute doses of the tincture of apis will relieve irritation and stinging of the urethra or external genitalia where there is nothing to be seen by the eye of the examiner, but larger doses act directly as a diuretic.

Again, asclepias tuberosa will relieve in quite small doses the pleuritic pains entirely subjective in character and resulting from a dry condition of the serous membranes involved; but give it in larger doses and the action is extended from the serous to the mucous membranes and finally to the skin itself. *These actions, both in the small dose and in the large dose, are physiologic actions.* There is no occasion to attach an element of mystery to the actions of remedies in small doses, nor is it necessary to elaborate any theories or systems covering such actions. That there are a large number of drugs possessing an action differing according to dose is a proposition that is never called in question. It is agreed as well that in the ordinary doses of the books these remedies act physiologically; but when the small dose is consid-

ered, the mysterious "dynamic action" or "the remedial action" or "the specific action" is at once conjured into being.*

Table salt in large doses is emetic, and in continued excessive doses causes scurvy and a whole chain of devitalizing symptoms, yet we all know that in small amounts it possesses the most distinct physiologic usefulness. Many of our condiments are markedly irritant or emetic in large doses. There is no mystery connected with the actions of these substances in small amounts. We simply recognize the two kinds of action they possess and do not attempt to separate either one of them from physiologic laws. The man who smokes tobacco for the narcotic effect of the small amount of the weed absorbed into his system does not regard that action as extra-physiologic because a larger dose of the same thing would produce muscular relaxation, depression,

* A fair estimate of the views held by the Homœopaths may not be amiss. There are many such estimates scattered throughout medical literature, and we here reproduce an eclectic view taken from an authoritative eclectic textbook, the 15th edition of "Specific Medication," by Prof. John M. Scudder, M.D. It is probably fair middle ground.

"The Homœopathic law of cure, *similia similibus curantur*, is based upon the fact that many drugs have two actions in kind, dependent upon the dose—the action of the small or medicinal dose being the opposite of the large or toxic dose. Drug provings being done with toxic doses, the medicinal influence is the opposite of this, and if in disease we see the symptoms of the toxic action of a medicine, the small dose, giving the opposite effect, will prove curative. Homœopaths may twist and turn as they please, they cannot escape these conclusions. But as these opposite effects, dependent upon quantity, do not pertain to all drugs, and vary greatly with many, Homœopathy has a short leg, and must go halt many times. * * * In other instances the action of the drug is the same in kind both in small and large doses, and some of them are quite valuable remedies, there being no danger of mistakes from dose. Homœopaths employ the first class, but have little use for the second, as will be obvious to the reader."

The author of this book does not stand sponsor for the above views, but finds them suggestive. Rejecting personally the theories of Hahnemann after reading largely of his writings, yet it cannot be denied that his followers have discovered many facts with reference to the action of remedies individually and have introduced into medicine many very valuable drugs.

The history of the Eclectic movement has shown much flexibility as to their theories which we need not consider except to state that they aim to use "specific remedies for specific indications," regardless of the names given to disease. Niederkorn says: "Specific medication does not teach that medicines will alleviate or cure certain diseases; that is to say, they will not cure an aggregate of symptoms arranged according to the much practiced nosology. Specific medication is the study by which we determine the direct action of remedies with special reference to their direct relation to pathological conditions, a study which determines a definite condition of disease, and points out the direct remedy for such conditions; a study which considers drug action as it relates to disease expression."

Practically, the Eclectic of to-day superimposes what he finds of practical account in Homœopathic practice upon what he has learned from regular sources. He adds to this a specialized knowledge of botanic drugs. We must credit them with much earnest effort. They have done more in the last fifty years to develop our indigenous botanic *materia medica* than has the regular school. In pathology they have added very little to medical knowledge, but their more recent works upon *materia medica* and therapeutics would be a credit to any school of medicine.

and emesis. The person who soothes a cough with wild cherry bark containing a minute amount of hydrocyanic acid, does not regard that procedure as extra-physiologic, because in large doses this acid is a powerful poison.

Because the physiologists and pharmacologists have not yet worked out the physiologic actions of most of our drugs in small or minute doses, does not prove that there are no such physiologic actions. It only proves that these gentlemen have yet a lot of work before them.

There has been a great deal of contention between regular and sectarian physicians as to the poisonous action of drugs; many of the sectarians claiming that everything they recognized as physiologic action was really the toxic action as opposed to the remedial action. This contention has not led to anything practical and has been to the discredit of all involved in it. Pedantic and unscientific squabbles such as this are what divide the medical profession to-day.

It appears that the average mind has to have some little "cult" or shibbolethic formula. We all bow down to these things more or less, and so it may not be amiss to tentatively advance a proposition to the effect that *in small and moderate doses we get the true physiologic action and in the large dose the physiologic reaction.**

This proposition will at least serve to lock up current theoretical differences, and gives us opportunity in the following pages to classify all reasonable data and to gather together such facts in *materia medica* and *therapeutics*, in its wider field, as we can use in treating our patients.

* In disease manifestations, it frequently requires a very large dose to be toxic, as, for instance, the large doses of veratrum tolerated in puerperal convulsions, of chloral in mania, or of quinia in profound malarial paroxysms. Small doses of drugs must, quite naturally, be frequently repeated as a rule. Where small doses are used merely to meet the symptomatology there is usually a quicker response than when they are employed to combat established diseased processes.

As to large doses, it is imperative that we remember that antizymotics and febrifuges cannot take the place of the curette, with septic masses in the womb; that antineuralgic remedies are of little avail with a suppurating middle ear; that high colonic flushing will often do much more than intestinal antiseptics; that medication for catarrh will not remove polypi, and that abdominal pain may be due to appendicitis and require the surgeon. By all means, let us study our cases and **TREAT** our patients not merely by drugs, but by every method properly adapted to the case. The study of drugs is important and is neglected, but there are other equally important branches in therapeutics. Don't *indefinitely* dose any one with large quantities of drugs. Invariably, they will do more harm than good, and please don't give eight or ten drugs at the same time.

Part I.

PHARMACY.

BOTANY.

As in chemistry, so also in botany, plants sustain definite relationships to each other; and as from its chemic affiliation we get an idea of the therapy of any new substance, so from its botanic classification we obtain some insight into its therapeutic indications. While the different species of a genus may vary to quite an extent in their range of action, yet their general action is usually along some definite line, and if the genus in general is inert therapeutically, we need seldom expect much from any newly introduced species of that genus.

THE RANUNCULACEÆ usually possess an acrid and poisonous juice, the active constituent of which is more or less volatile. Plants of this natural order should be worked fresh or in a comparatively recent state in making tinctures or extracts and heat should not be employed in the process. The roots of some species contain more or less permanent alkaloids, and these roots need not be handled so carefully. Pulsatilla is an instance of the first class and aconite root of the second class. Nearly all plants of this order are more or less poisonous, and externally applied are vesicants. Clematis or virgin's bower is an exception, but it is actively purgative. Hepatica also is not an active drug, while Xanthoriza is esteemed as a bitter tonic.

THE MAGNOLIACEÆ are characterized by aromatic tonic properties.

THE BERBERIDACEÆ possess acrid and bitter properties. Berberis, caulophyllum, podophyllum, and jeffersonia are instances of this order. They are active because of resins and alkaloids, and are readily manipulated pharmaceutically.

THE PAPAVERACEÆ, an order widely distributed, are all more or less narcotic and acrid, but fill quite different indications. Opium, celandine, and sanguinaria are representatives.

THE CRUCIFERÆ are non-poisonous, acrid irritants with volatile constituents. Mustard, horse-radish, and shepherd's purse are of this order.

THE MALVACEÆ, a tropical order, gossypium being the only species much employed in medicine, are worthy of investigation. They deteriorate very much by drying.

THE ANACARDIACEÆ possess a resinous or milky and commonly poisonous juice. There are over a hundred species, mostly of tropical habitat, and not investigated medicinally. The genera represented by the various species of Rhus have been well studied.

THE RHAMNACEÆ is another interesting order. "Cascara sagrada," which is properly Rhamnus purshiana, was made light of some years ago, but it has proven so valuable as to suggest that the same manipulation of the bark that develops its properties may be applicable with other shrubs and trees. There are over forty genera of this order.

THE LEGUMINOSÆ include melilotus, baptisia, American senna, and other remedies of some importance. The three sub-orders embrace many tropical plants little studied as yet, but some of them contain coumarin, a substance occurring in several of the adulterants of smoking tobacco and markedly influencing the heart.

THE ROSACEÆ, a large and important order embracing

many of our domestic fruits. Wild-cherry, agrimony, and others are used in medicine.

THE UMBELLIFERÆ embrace many poisonous species which grow in wet places. Some of those thriving in dry sections possess useful aromatic properties. Conium, eryngium, and the familiar wild carrot and cow parsnip are of this order.

THE COMPOSITÆ are a large order possessing tonic properties but a disagreeable taste. They are represented by boneset, golden-rod, and elecampane.

THE ERICACEÆ are diuretics, as instanced by uva-ursi and arbutus.

THE LABIATÆ are non-poisonous aromatics, and include the mints.

THE SOLANACEÆ are narcotics. The night-shades, hyoscyamus, and stramonium are of this order. Only assayed preparations of these drugs are to be relied upon, and great care is necessary in their manipulation. The recent herbs make up well into standard tinctures, and such preparations are preferable to non-assayed fluid-extracts.

THE EUPHORBIACEÆ are acrid and emetic. The varieties of spurge and stillingia are native to the United States. Some of them are alterative.

THE CONIFERÆ are an important order of resin-bearing trees and shrubs. The hemlock, spruce, larch, arbor vitæ, and juniper are instances.

THE LILIACEÆ are commonly emetic and cathartic and influence the circulation. Veratrum and convallaria are of this order.

These botanical data are largely derived from a "Manual of the Medical Botany of North America," by Prof. Laurence Johnson. For more detailed information the reader is referred to it and to the various Dispensatories.

A superb medical botany, illustrating in colors one hundred and eighty American medicinal plants, has been prepared by Dr. C. F. Millspaugh. These books will cover both the regular and sectarian lists of plant remedies.

BOTANIC MEDICAMENTS.

The standard works upon medical chemistry enter so fully into all essential data with regard to inorganic drugs that it is unnecessary to discuss the matter here. With regard to serum medication, special works should be consulted.

Botanic drugs present so many special problems with regard to their pharmaceutic manipulation that some discussion of the matter is imperative in elucidating the therapy of the small dose.

The climatic conditions, the soil, the conditions of growth, the changes taking place during growth, the time and manner of harvesting, curing and shipping, as well as the length of time the cured product is kept in stock, all markedly influence vegetable drugs. Great variations occur in different lots derived from the same source of supply, and careful manufacturing pharmacists seldom purchase before a working trial is made of a lot as to the character of its extract, the ease of alkaloidal separation, and the assayed values.

EXTRACTS, as made by the usual U. S. P. methods honestly followed, seldom disappoint. Unfortunately, poor materials, sophistication, and quick but defective processes characterize the manufacture of the great bulk of solid and fluid extracts upon the market.

As an illustration of approved processes for the making of extracts upon a large scale, we reproduce from

"Red Cross Notes," Series V, No. 3, the following: "By the term extraction is meant the operation which has for its object the separation of the physiologic and therapeutic principles of the drug by treating it with liquids capable of holding these tinctures in solution.

"The extraction and the separation of the chemic constituents of drugs is a comparatively simple problem, but, as is well known, the chemically evolved products differ quite materially, in many instances, from the structure itself. So the pharmaceutic preparations of the drug may differ in purpose and action from the products that the chemist breaks out of the plant. Professor Lloyd has well stated that 'the sum of the fragments (chemic constituents) that may be broken out of a plant structure by chemic methods, although possessed of marked characteristics (and some of them energetic physiologically) is not representative of the full therapeutic energy either of the plant or the ordinary pharmaceutic preparations.'

"The general process of extraction may be described as a modified repercolation or fractional percolation, and is in brief as follows:

"The drug is bulked, mixed, dried and ground, and then assayed. The ground drug, in lots of two hundred and fifty pounds, is moistened with the menstruum. This moistening is accomplished in a rotary mixer run by power. . . . The moistened drug is packed in conical iron percolators, porcelain-lined, with vapor-tight covers.

"After sufficient maceration the percolation proceeds. The menstruum is fed to the percolators by a system of pipes. At the end of the row of percolators are two large measuring tanks being fed from larger tanks containing the main supply of the menstruum. . . . The menstruum for the first percolate is a weak percolate from a previous percolation. This first percolate is a concentrated

fluidextract. When two hundred and fifty pounds of concentrated percolate have been collected, it is reserved for concentration to a solid extract."

As will be seen, this process describes the extraction of a fluidextract without the aid of heat. To convert this into a solid extract, the drug in the percolators is exhausted, the weak percolate going into the next percolator, while the concentrated fluidextract is concentrated at the lowest possible temperature, the alcohol being recovered. This is done with elaborate vacuum concentrators, and each batch of solid extract is assayed. To make a solid extract some heat is necessary, but, with the exception of a very few drugs, there is no excuse for employing heat in the making of fluidextracts.

Numerous criticisms have been made of fluidextracts. We will consider in detail the more reasonable ones, but it must be borne in mind that in approving fluidextracts we have in view none but high-class products.

A leading criticism is that all official fluidextracts are made from the *dried* drug, and therefore, in a number of instances, are not sufficiently active. Until recently this was the case, but several enterprising manufacturers now offer a list of green plant fluidextracts, the principal ones being black haw, cimicifuga, cactus, corn silk, cotton-root bark, echinacea, gelsemium, passion flower, poke root, stillingia, and saw palmetto. The fact that large manufacturers enjoy superior facilities in purchasing and promptly working up the crude drug militates in favor of the modern machine-made fluidextract over those made in small quantities in retail pharmacies.

A second criticism is that fluidextracts contain a large proportion of useless extractive, inert resins, starch, gum, pectin, coloring matter, and plant detritus generally. This argument certainly does strongly apply against the

cheaper grade of fluidextracts, but those made of strong grain alcohol and without the aid of heat contain no greater relative proportions of these inert matters than do tinctures. Naturally, both of them carry a fair proportion of these inert substances, even with careful preparation; but various makers have directed much intelligent effort towards the perfecting of certain fluidextracts and tinctures; and preparations such as Parke, Davis & Co.'s cascara, Squibb's ergot, and Norwood's veratrum, are to the credit of American pharmacy.

Another objection is that the fluidextracts of plants not very extensively used in regular practice are not of the high quality of those more commonly employed. This valid objection is hard to meet with a practical solution. Many unavoidable reasons conspire to make it frequently the case that these products are either inferior when first made or become so by being long kept in stock. Probably it is wise to procure such fluids from the manufacturers direct or to employ fluids emanating from sectarian sources when drugs are wished largely employed by sectarians and but little used by regular physicians.

A last objection is that fluidextracts so frequently precipitate or become muddy. Cheap and poorly made ones do so to an annoying degree. The best ones do so at times. It must be remembered that they are very concentrated preparations, and usually the sediment will again enter into solution when incorporated with a solvent. Certain plants contain matters liable to gelatinization, and they spontaneously decompose, when incorporated with a fluid medium, into a worthless brown magma with which nothing can be done. Iris, geranium, stillingia, cotton-root bark, and urticaria are peculiarly liable to this change. Extractive matter and tannates precipitating gradually in some high-grade fluidextracts can be re-

moved by filtration oftentimes to the advantage of the product. Such substances as cannabis indica or ipecac should not be filtered to remove precipitates from their fluid preparations.

As a practical matter of fact, the little sediment existing in high-class products is not of great consequence when one is prescribing for the action of remedies in the usual or the large dose.

U. S. P. TINCTURES, by the recent revision, are much changed in strength. Potent tinctures are now made of 10 per cent. strength, whereas the 1890 aconite was 35 per cent., belladonna 15 per cent., cannabis indica 15 per cent., cantharides 5 per cent., colchicum seed 15 per cent., digitalis 15 per cent., gelsemium 15 per cent., hydrastis 20 per cent., hyoscyamus 15 per cent., lobelia 20 per cent., physostigma 15 per cent., sanguinaria 15 per cent., squill 15 per cent., stramonium 15 per cent., strophanthus 5 per cent., and veratrum 40 per cent.

Tinctures are frequently made by diluting a fluidextract, but the practice is not to be commended. The U. S. P. tinctures are to be preferred to the fluidextract in many instances, since they possess the distinct advantage of an excess of solvent holding in solution the inert substances so liable to cause trouble with fluidextracts. Veratrum viride is an instance of this. Here we have a drug quite difficult to work. If the root is too recent, it forms with alcohol a slimy mess, while if it is tinctured in a perfectly dried state it does not possess the full drug value. To use the partially dried root in a fluidextract is not readily done to advantage, whereas a 10 per cent. tincture carries the drug perfectly. The tendency of the U. S. P. Revision Committee is to eliminate tinctures so far as is possible, and where the tincture is retained there is usually very substantial data back of their decision.

GREEN PLANT TINCTURES are official under the title "Tinctura Herbarium Recentium," and are made of green or recent herbs, cut into small portions, 500 grams, and alcohol 1000 c.c. The whole is digested for two weeks, run through a tincture press, and filtered.

The fact has been long since developed by English chemists that narcotic herbs are much deteriorated in the process of drying, and their medicinal value almost wholly destroyed by careless drying, by age, or by exposure. The Germans go still further, and some of them contend that drugs other than narcotics are similarly influenced, and they would have nearly all tinctures made of the recent drug. Differences in physiologic actions have been observed as regards dried and fresh specimens of various plants. This has been studied in detail with belladonna, cimicifuga, gelsemium, hyoscyamus, and pulsatilla.

Many medicinal plants have no appreciable odor until a branch is broken off or they are otherwise crushed. Chlorophyll exists in all plants, and its change or degeneration is due to the oxidizing ferments contained in the cells of the fresh plants. A ferment action is initiated so soon as there is any solution of continuity or the plant is separated from its stem, and then the chlorophyll is soon destroyed. Changes within root structure are usually due to resinous matters. When a plant is uprooted from the soil, is crushed or severed from the stem, the end of organic existence begins and the plant dies just as does an animal, only more slowly and in detail. Micro-organisms collect in the plant tissues and multiply with enormous rapidity. No amount of care in curing or drying can do more than merely modify the changes so produced. Left alone, the plant rots; carefully handled, it ferments and destructive changes occur in it, destroying volatile

and even alkaloidal constituents and developing the deleterious products of fermentation and decay. These changes have an important bearing upon the active principles and the medicinal value of a large number of our plant remedies. The argument of dollars and cents will not serve to minimize the importance of these considerations.

The tall crowfoot and other weeds are known to cause abortion in cows. Many weeds will injure the stock, and yet when the grass crop is cut, weeds and all, it is seldom that the hay does much damage in this direction. Animal instinct does not always serve to warn against injurious weeds in the field or in the manger. In Germany, wind-flower or pulsatilla is a weed of this character. It is dangerous only when in its green state. In the curing of the tobacco leaf infinite care is taken, and even cultures of certain bacteria are sprinkled upon the leaf in order to modify the *kind* of decomposition occurring during the drying process. We all know the differences between fresh and dried fruit, but we can enjoy dried apples or peaches, since their flavors are not so volatile and they do not decay too rapidly during the drying process; but we would not so much care for dried strawberries or pineapples. If the articles of food value are influenced by drying, and common experience testifies to the fact that most plants we eat are so influenced, why do we neglect this factor in the infinitely more complex relationships plants sustain to us as medicines? *Many of the therapeutic actions in small doses cannot be obtained with fluidextracts and tinctures made in the usual manner, owing to the almost entire absence of certain volatile constituents.* Quite naturally, this is purely a matter of chemistry, and does not apply to plants of more stable chemic structure. Persons practically conversant with

the complexities of plant chemistry will not feel that it is drawing things to too fine a point to insist upon these matters even in our lack of ability to always define the exact nature and action of these elusive and not always well-defined substances.

Several kinds of green plant tinctures are upon the market. Many discriminating clinicians report much satisfaction from the use of "German tinctures." They cost about \$2.50 per pound, and are of the highest grade therapeutically and pharmaceutically.

HOMŒOPATHIC MOTHER TINCTURES are all designated by the Greek letter theta (θ).

The strict homœopath insists upon the elaborate rules of Hahnemann, as instanced in the "American Homœopathic Pharmacopœia," by which the expressed juice of the fresh plant is combined with alcohol wherever possible, although some of these tinctures are prepared by maceration similarly to our own official tinctures and commonly in the same or greater relative proportions of plant to alcohol, so that these homœopathic green plant mother tinctures are very active preparations. The weakest of them represent one part in eleven, belladonna being the principal one of this strength. A large number of poisonous substances, such as aconite, are one part in seven. Care must be taken to employ them in smaller doses than the U. S. P. tinctures. Many less active ones are made in greater concentration. A few, as instanced especially by ipecac and nux vomica, are not made from the green plant.

The homœopathic profession in the United States is divided in sentiment over a good many matters pertaining to their own school, and a large number insist upon employing their own tinctures more or less for their physiologic actions. This has resulted in the "Homœopathic

Pharmacopœia of the United States." In this work the amount of moisture in the green plant is always estimated, and the tinctures are all made as representing one part in ten of the dried herb. The green plant and pure alcohol are used and the proportions of plant and alcohol vary, since some plants are more succulent than are others. The finished product, it is readily seen, is identical in drug value to our own tinctures, only made from the recent plant in nearly every instance. A high-class homœopathic pharmacist is almost fanatical in his care in making mother tinctures; consequently, these tinctures are really of the very highest order of excellence and must be given in even smaller doses than our own one-in-ten tinctures because of their high physiologic activity due to using the green plant, most thorough exhaustion of the drug, and the employment of full strength alcohol in tincturing.

These latter one-in-ten tinctures are the strength always considered in this work when homœopathic mother tinctures are spoken of in the *Materia Medica* section. Homœopaths have a penchant for using highly poisonous substances, in dilutions of course, and the tinctures from which these dilutions are made are highly toxic. Some of them are not familiar to the regular school, such as *Agaricus muscarius*, *Æthusa*, *Ailanthus*, etc. It is wise to try no experiments with these comparatively unknown substances, and the doses given in this book should not often be exceeded, so far as concerns these toxic agents.

ECLECTIC TINCTURES. The eclectics have been most fortunate in having had identified with them two such eminently scientific pharmaceutic chemists as Prof. J. Uri Lloyd and Dr. William S. Merrell. Headed by these gentlemen, the school has developed the chemistry and

pharmacy of plant medicaments in a manner of vital interest and importance to all physicians, whether employing them as the eclectics do or in other manners.

Two lines of their preparations are upon the market: the so-called "specific medicines" of Lloyd and the "normal tinctures" of Merrell. The former have more official eclectic recognition, although the latter are identical with them except in a few instances. The former have probably been a little more developed in detail, and especially as concerns a few drugs, but the two lines of preparations in most essential particulars are parallel. Because of their official standing we will discuss the former, although equally commending the "normal tinctures."

The name "specific medicine" is rather unfortunate. The eclectics do not mean them as specific in disease, but as specifically representing the active medicinal content of the drug employed. Pharmaceutically they are high-grade tinctures, one minim of which represents one grain of the dry crude drug. They are largely used by regular physicians, who call them Lloyd's tinctures. Their labels bear the eclectic indications, and their so-called "usual prescription," but a table of minimum and maximum doses is issued by the manufacturers. Extensive use of them upon the part of the author suggests the caution that many of them should be administered in only half the dose of the usual grade of fluidextracts, when given for the full physiologic effect, until one has cautiously felt his way in each individual case.

Their great activity is readily explained, since they are made usually of plants in their green or recent state (some of the "specific medicines" are chemicals, however), and the few not worked fresh are subjected to special processes in drying. Also, it may be said that their high price justifies the makers in purchasing the

cream of the available supply, just like *a few* of our fluidextract manufacturers do.

The process employed varies with the substance used, but is usually a combined maceration and percolation with the aid of ingenious concentrating apparatus in which heat is not employed. Strong grain alcohol is the menstruum, and individual processes are used with different drugs to get rid of inert resins, extractive matter, starches, coloring matter, and plant detritus. The result is a clean and highly active tincture. In administering remedies for their actions in small doses, these products present distinct advantages over ordinary tinctures and fluidextracts, and our rather conservative official standards could most advantageously incorporate some of these processes in the elaboration of official preparations.

In practical use the "specific medicines," the "normal tinctures," and the "mother tinctures" do not present their claims so tangibly in the large as in the small dose. A really high-grade fluidextract is a tincture to all intents and purposes, only it is stronger than are the usual tinctures. The amount of inert substances in the fluidextract is relatively large or small according to the menstruum and the processes of extraction employed, and, in the large dose, they do not much interfere with the action of the active principles of the drug, but we should employ the green plant fluidextract or the assayed product in the instances already dwelt upon. In the small dose many of the high-grade fluidextracts do very well, but in general the special tinctures made from green drugs are distinctly preferable. One wants as little admixture of inert substances as is possible, since they interfere with the action of the small portion of active medicine present, and this is particularly true when they are added to water and the precipitated resins carry down and sometimes react

upon the proximate principles of the plant. Again, the action in small doses is not always due to alkaloidal substances or the generally considered active principles. These volatile or readily destroyed ingredients of the green plant are rarely found in any appreciable quantity at all in a fluidextract, as they are dissipated in the drying of the plant or in its manufacture into the fluid-extract.

It is far from our purpose to appear pedantic or disloyal to the regular school of medicine, and it will probably be hard to convince the physician who knows that good fluidextracts do not fail him in the usual doses, that they are apt not to do so well in small doses; yet any one practically conversant with the matters here discussed will bear out, in the main at least, our present contention. Most unfortunately, our fluidextracts are being altogether too much displaced by proprietary elixirs and by ineligible tablet forms of vegetable drugs. It impresses the writer that this is far more disloyal to our own school than it is to define the limitations of the fluidextract; and it is distinctly detrimental to scientific medicine to discard our own carefully worked out official formulæ in favor of the commercially prompted efforts of men who seldom know so much about drugs as do the able and distinguished gentlemen who go to infinite pains to render accurate and efficient our own official standards. In the following pages ec. tr. will be used to specify all standard preparations of this kind.

DISPENSING FLUIDS. It has become quite the custom to eliminate fluids from the portable medicine case. Permit the suggestion to all readers who practice with tablets that a list of twenty liquids be prepared, and, with that before you, go over in review the run of cases met with in which bedside dispensing is proper. Then think

of the indications to be met with these liquids, singly or in combination, and how you can modify the strength or relative proportions to suit varying ages and personality. Now estimate how many different kinds of simple and combination tablets it would take to meet these same indications. It would be very easy to run the list up to two hundred if one felt inclined to press the point. Of course, one wants some pills, tablets, and powdered drugs in his case as well.

Ordinary tinctures are too large in dose to be well adapted to carry in portable cases, but fluidextracts and the eclectic tinctures are not. Fluidextracts of ipecac, ergot, and cannabis indica, spirits of glonoin, tr. opium, chlorodyne, eclectic tinctures of aconite, belladonna, gel-selenium, digitalis, nux vomica, sanguinaria (all of which mix with water without precipitation), Norwood's veratrum viride, chloroform, liq. ferri chloridi, brandy, ess. pepsin, a bromide or chloral mixture, and some reliable fluid antiseptic, like carbolic acid, or one of the various cresol preparations, are all fluids exceedingly useful and cannot be satisfactorily displaced with powders or tablets.

In dispensing fluids for their actions in small doses, it is well to mix them with water containing just sufficient glycerine or alcohol (preferably glycerine) to prevent the souring of the mixture. Combining with them syrups and elixirs oftentimes defeats the end aimed at by the medicine. A large proportion of the eclectic tinctures mix clearly with water, and a day's supply of medicine can be mixed simply with clean water, covered, and kept in a cool room. When sp. etheris nitrosi is indicated, it may be combined with nearly any of the fluidextracts for bedside medication.

Fluids given for their actions in large doses can be combined with simple elixir or just sufficient tr. carda-

momi comp. or tr. gentianæ comp., ess. pepsin, syr. rhei aromat., sherry wine, neutralizing cordial, mint or cinnamon water, or any indicated substance suitable to the case; but the practice of mixing up several liquids with syrups or highly flavored elixirs is mentioned only to be condemned.

One-ounce vials are convenient for a business man to carry, and it is not at all hard to administer fluids to cover most indications, with the dose not exceeding fifteen or twenty drops. Some patients have a fancy for homœopathic sugar disks. When drop-or-two doses of a purely alcoholic medicine suffices, a vial of disks medicated with the remedy is very convenient to the patient. Aconite, belladonna, bryonia, nux vomica, and a few other drugs are given in sufficiently small doses as to admit of this method, but our official tinctures are not purely alcoholic and the water in them makes the disks soften or adhere.

TABLETS AND TRITURATES. The tablet form of medication, owing to its convenience and accuracy, has taken a more or less permanent hold upon the profession. Within proper limitations they are to be commended as suitable for the administration of many chemicals, powdered drugs, resins, extracts, and some of the alkaloids; but to attempt to cover the entire therapeutic range or to incorporate some of the delicate plant products with tablets is neither good pharmacy nor good therapeutics. In general, the attempt to administer organic drugs for their indications in small doses in tablet form has yielded results inferior to that obtained with liquids.

Tablet triturates are usually preferable to compressed tablets of usual make. All schools of medicine make their tablet triturates in essentially the same manner, but the homœopaths continue the trituration for a much longer time in order to "potentize" the drug. While the

theory must be accepted with an exceedingly large measure of reserve, the practice of long trituration is to be commended. Their ix trituration tablets of mercurius dulcis is to be preferred to our usually made 1-10 gr. tablet triturate of calomel. It is identically the same dose of the same drug, but the long-continued trituration makes it act more efficiently than do our tablets. This same applies to several other but slightly soluble or insoluble drugs.

ALKALOIDS. An ex-president of the American Pharmaceutical Association has recently said: "The alkaloid, quinine, discovered by Gomes, of Lisbon, in 1812, was second only to morphine, discovered by Derosne in 1803. These two alkaloids, powerful in themselves, led thought in the direction of proximate basic plant principles, designed to replace established drugs.

"Very rationally, if a person considers only certain phases of these two useful alkaloids, did men argue that a chemist had but to pick an active proximate principle out of each remedial drug. . . . That fad came in over one hundred years ago, and between the discovery of the first alkaloid, morphine, and the present date lies a threshed-out pile of straw that staggers him who thinks of wasted energies. Some grain has been discovered, it is true; some rich gifts to therapy, which are to be gratefully credited to the faddists' cause. But in the face of the amount of straw and blasted hopes that litter pharmacy's pages, it would seem as if reflective men might well ask, 'Is not a hundred years of time enough for men, with the record of great hopes and much disappointment before them, to be involved in a fallacy?'

"The fact is, only a comparatively few plants contain or yield alkaloids in appreciable amount, and of the known alkaloids only a few are of any established thera-

peutic value whatever. Besides, many separated alkaloids are more harmful than useful, while the finer attributes of certain drugs cannot be obtained in the presence of the overpowering alkaloid."

Historically, the following extract from the "Encyclopedia Americana" covers the ground: "Prof. John King discovered and introduced the resins of *podophyllum* and *macrotys*, which, together with the alkaloids of *hydrastis* and *sanguinaria*, were afterwards prepared by Dr. William Stanley Merrell. These valuable agents, together with the oleoresins of *iris* and *capsicum*, attracted the attention of pharmacists. A host of indefinite compounds was added by others, and the market was flooded with what purported to be eclectic resinoids or concentrations. This heterogeneous class of pharmacals was denounced by Prof. King and others, who had sought to introduce only elegant and definite compounds. This much-abused class of resinoids served, however, a temporarily useful purpose in the evolution of a more perfect *materia medica*. Of these preparations only those made after the methods of Dr. King and the alkaloids of *hydrastis* and *sanguinaria* have survived, and singularly are now mostly employed by practitioners of the dominant school."

Pharmaceutically, the substances we have discussed bear a definite relationship to the drug, whereas resinoids, such as *leptandrin*, *caulophyllin*, *euonymin*, *stillingia*, and others are about equivalent to purified powdered extracts. *Aconitine*, *atropine*, and other alkaloids are much more definite and stable substances than are these resinoids and concentrations. Some of the glucosides, such as *digitoxin*, are very active and are moderately definite chemically, whereas others are exceedingly disappointing. *Veratrum viride* has yielded a number of substances of alkaloidal characteristics, probably chemically-made frag-

ments and not natural integral parts of veratrum. None of them is of established therapeutic value. Gelsemium sempervirens is another drug of like characteristics. The alkaloid, gelsemine, produces the *poisonous* effects of gelsemium, but the writer speaks advisedly and after very large use of gelsemium in asserting that it has no true *therapeutic* representative in alkaloidal form. The root of this plant should not even be dried before tincturing, let alone split up and manipulated by chemicals, when one wants the true therapeutic action of this most valuable remedy.

If one cares to undertake a discouraging task let him investigate the chemistry, and especially the alkaloidal chemistry, of jaborandi. Chemists have devoted years to the study of the various species of jaborandi, and the distinctions and relationships of their chemical educts are still an enigma.

These matters are entered into not to discourage the proper use of alkaloids and more or less chemically allied proximate principles, but to direct attention to the fact that the recent craze over alkaloids and the effort to overdo alkaloidal medication illustrates the old saying, "there is nothing new under the sun," and, further, to combat the statement, so commonly and erroneously made, that in alkaloids we have sure and definite medicaments much preferable to the galenicals themselves. It is true, however, that the very excellent alkaloidal granules now marketed by a few houses are more definite and reliable medicaments than are the great body of the atrocious mixtures made of third-grade drugs and sold cheaply through irresponsible physicians' supply houses in the form of compressed tablets.

Alkaloids have their legitimate place, and as emergency remedies or to employ in the initial stages of dis-

ease sharply marked by disturbances of innervation, circulation, and temperature, they are distinctly useful if cautiously and conservatively employed, but the faddist who employs them in the main in the regular conduct of his cases is one-sided and is not doing his duty by his patients.

SYNTHETICS. Alkaloids, the result of analysis, are more or less incomplete and uncertain plant representatives. Synthetics are even more uncertain, being the result not of nature's slow but of man's rapid synthesis. This developing branch of chemistry doubtless has a great future before it, and therapeutics will ultimately be much indebted to it. But at present a large proportion of the synthetic products are chemicals whose molecules are held in somewhat unstable equilibrium and are peculiarly liable to disintegration and interchange. For this reason a hopeful conservatism should mark our employment of them.

Certain synthetics have become well known; their physiologic actions have been definitely worked out, their incompatibilities are determined, and their contraindications are defined. These are probably permanent additions to our therapeutic resources. On the other hand, a host of untried and unnecessary ones are arising. We know but little about them, and obtaining clinical data concerning them constitutes more or less of a hazard to our patients. In the day when the people dosed themselves with herbs, even though usually wrongly directed, they seldom worked any positive harm, but now these potent synthetics in lay hands are causing a world of injury.

From the standpoint of this author there are two great objections to the synthetics. First, their lack of stability renders them liable to unaccountable and erratic action due to chemical reactions in the human body not well

understood and varying with individual and pathologic states. Of course, this can be said of drugs other than synthetics, but it applies to the former in lesser degree. The objection can be partially met by administering synthetics alone, never combining with other drugs except stimulants and substances destitute of chemical reactions. Secondly, the synthetics seldom act except in the full physiologic dose.

Their detailed consideration in this volume will be undertaken to but a very limited extent, confining attention to what is definitely known concerning the safe employment of those better studied and largely employed by conservative prescribers.

OINTMENTS AND CERATES of the U. S. P. are so admirable and so well known that little need be said of them here. The homœopaths employ an extensive line of green plant cerates, usually of 25% strength. They are very active preparations, aconite, *æsculus*, *bryonia*, *calendula*, *hamamelis*, *hydrastis*, *phytolacca*, *plantago*, *stramonium*, and *thuja* being the principal ones.

The eclectics use a similar line of cerates, laying especial stress upon *echinacea*, *stillingia*, and *juniper*. They have an ointment representative of the alkaloids of tobacco and fancifully styled "Dynamine." This same, combined with a modern substitute for their old "compound lobelia powder" in cerate form, is called "Libradol," a pain relieving and relaxing application requiring care that sufficient is not absorbed by the skin to cause emesis. With careful use it is a valuable agent. These ointments and cerates with official sectarian sanction constitute a useful accessory to our own official list. Combined, they cover every indication and render the host of proprietary ointments quite superfluous.

THE NATIONAL FORMULARY. For many years an effort has been made to unify formulæ for ready-made mixtures and to place these preparations upon a more scientific basis. This effort has taken concrete form in the National Formulary, a careful study of which we here take the liberty of commending. It is to be regretted that this splendid collection of formulæ is not in more general use, paralleling, as it does, nearly all the really useful proprietary compounds, the extensive advertising of which is paid for by the man with the prescription.

To be just to the proprietary interests, it may be well to say that there are a few preparations not susceptible of any but most elaborate manipulation and which are, in the very nature of the case, proprietary and strictly ethical; but this modern necessity has been abused very largely by small concerns wishing to make money under the guise of science and by the large manufacturers very unjustly pirating each other's specialties. As a matter of fact, a large proportion of the proprietaries extensively prescribed by the regular profession are old eclectic formulæ, while some of them are homœopathic and are made from mother tinctures.

Permit a final exhortation urging all physicians to study the legitimate pharmacy of all schools. What is herein recorded is a mere outline. Our best reply to the sectarians is to employ all their resources of real utility, for you can rest assured that they employ ours. So soon as the public learns that sectarianism has nothing tangible to offer, sectarian names will cease to pay and there will be but one school of medicine, to the benefit of all legitimate interests concerned.

Part II.

MATERIA MEDICA.

This alphabetically arranged *materia medica* being not designed as a guide for class-room work, chemic and botanic descriptions may very properly be omitted except with unfamiliar drugs. *Toxicology* not especially concerning our present range of study, it will also be omitted except in a few salient details.

PHYSIOLOGIC ACTIONS will be given in as simple and direct a manner as possible and divided into two headings, viz.: *the physiologic action of the larger but non-toxic dose*, and *the physiologic action of the small dose*. Our principal guides in defining the physiologic actions have been the writings of Bartholow, Wood, and Hare upon our official drugs; of Ellingwood upon drugs especially developed by the eclectics; of G. Hardy Clark (an advocate of the modern homœopathy as opposed to Hahnemannism in therapeutics) upon remedies of homœopathic origin; of Coblenz and "Merck's 1905 Manual" upon synthetics, alkaloids, and rare chemicals; while various drug studies and journal articles supply data upon drugs of recent introduction. **DEFINITE SYMPTOMATOLOGY** and direct actions rather than purely laboratory data are given, and *the actions upon man*, excluding those based upon experimental studies upon the lower animals, are alone referred to here.

Doses have been arrived at by careful comparisons of those recommended by *medical and not by pharmaceutic authors*. The dose of the crude drug is omitted in most instances, and all doses given are those for adults except where specific reference is made to infantile diseases.

The eighth decennial revision (1905) of the United States Pharmacopœia is the basis of official preparations and the Homœopathic Pharmacopœia of the United States of homœopathic preparations, while the American Dispensatory officially represents eclectic pharmaceuticals. They are our guides in the preparation of much of the data in this volume.

NOTE.—*The following abbreviations are used: Tr. signifies the 1905 U. S. P. tincture; f.e. the fluidextract; ① the mother tincture; Ix, 2x or 3x the attenuation represented by 1-10, 1-100 and 1-1000 respectively of drug strength; ec. tr. means the standard eclectic tinctures, placed on the market under various names, as "specific medicines," "normal tinctures," etc. No metric abbreviations are used. ESPECIAL ATTENTION is called to the fact that doses of fluids are given in minims, not in drops. This makes some doses appear small upon first thought, but it conforms to the wise basis of the U. S. P. Drops are too uncertain a standard of dosage, and with many tinctures the drop is much less than the minim.*

NOTE TO THE READER.—It is absolutely necessary to read the preceding portion of this work in order to properly understand what is said under the following different drug headings:

ABIES. *Abies canadensis*, or hemlock spruce, supplies a gum known as Canada pitch. From it a plaster is prepared possessing rubefacient properties. *Oil of hemlock* is prepared by distilling its branches with water. It possesses terebinthinate diuretic properties, which, combined with balsams, expectorants, and other diuretics, has been employed in a large range of affections of a catarrhal character. A tincture of the fresh inner bark is more suited to internal administration. It is a terebinthinate astringent, useful in chronic coughs with free expectoration. Give doses, in syrup or elixir, of from 5 to 15 mL .

In small doses (@ 3 to 5 mL or ec. tr. *pinus*, 1 or 2 mL frequently repeated and gradually increased), it is useful in catarrhal conditions of the stomach accompanied by abdominal distention, and in the chronic gastro-intestinal troubles of poorly nourished children. Give very small doses in the babe's food, and cautiously increase as it is tolerated.

Abies nigra, or black spruce, is of too irritating a character to use in large doses, although its action is along similar lines to the hemlock spruce.

In small doses (@ 1 to 3 mL , well diluted) it is useful in the atonic dyspeptic troubles of the aged. It should not be given to children. It is sometimes of use in constipation due to deficient peristalsis.

ACETANILID, in proper doses, is rapidly eliminated, but retards nitrogenous tissue waste. Not directly influencing the circulatory apparatus, yet it inhibits heat production, and so indirectly depresses respiration and circulation. Its long-continued administration favors the production of methemoglobin, and ultimately may cause degenerative tissue changes. It is antipyretic, analgesic, and anti-

septic. Its administration should be guarded, and stimulants, such as caffeine, may be advantageously combined with it.

Dose, 3 to 10 grains. Avoid large doses in fever, and do not use in anemic headache. It may be used in 1 to 500 solution as a preservative of hypodermic solutions. The proprietary admixtures of this drug are in no manner superior to the *Pulvis acetanilidi compositus* of the U. S. P. (acetanilid, 70%; caffeine, 10%; sodium bicarb., 20%. Dose, 3 to 15 gr.).

ACETATE OF POTASSIUM AND ACETATE OF ZINC. See Potassium Acetate and Zinc Acetate.

ACETOUS TINCTURES have been frequently urged upon the profession. The U. S. P. gives official sanction to Acetum opii, a 10%, the average dose of which is 8 ℥, and a similar preparation of squill, the average dose of which is 15 ℥.

An old eclectic "acetous tincture of bloodroot and lobelia" is still somewhat in use, and is a most eligible remedy in croup and tight coughs. Dose, 10 to 60 ℥. The U. S. P. recognizes acetic fluidextracts of lobelia, sanguinaria, and squill.

ACID, ARSENOUS. See under heading of Arseni trioxidum.

ACIDUM BENZOICUM, in doses of 10 to 30 gr., is antipyretic and antilithic, but is too stimulating to the brain to be administered for long periods. Doses of 10 or 15 grains are of advantage in the irritation of the sympathetic and spinal nerves caused by an excess of uric acid. Long-continued administration sometimes gives rise to irritation of the gastro-intestinal tract. This acid acts by

reason of its conversion into hippuric acid, thus rendering the urine acid. When the normal acidity is reached during the administration of benzoic acid for its antilithic influence, it is proper to reduce the dose. With due precautions the full physiologic action can be induced with safety. Sodium benzoate has a similar action. Naturally, conditions of urinary incontinence, urethral irritation, and cystitis, caused either by alkalinity or by phosphatic deposits, are markedly benefited by its administration. It also reduces the acidity of uric-acid urine.

In small doses it is expectorant, useful in chronic coughs, and the cough of women in which urine dribbles away during the paroxysms. Dissolve 3*i* in alcohol $\frac{f}{3}$ *ii* and administer in 3 to 20 drop doses. Small amounts of this acid can be advantageously ingested by the free use of prunes, which contain it.

ACIDUM BORICUM in large doses depresses the spinal centers and disturbs digestion. Moderate doses sometimes occasion cutaneous irritation, with ecchymosis and edema. It is employed internally in cystitis and abnormal gastric fermentations with success, but in general its internal administration should be only for short intervals. Dose, 3 to 10 grains.

Externally, it is a non-irritating and moderately effective antiseptic with a wide range of application. In ointments it is commonly made up in 5 to 10%; in aqueous solutions, 1 to 4%; in combination with glycerin, 5 to 10%; in eye lotions generally, 5 grains to $\frac{f}{3}$ *i*; while for styes, 15 grains to water $\frac{f}{3}$ *i*.

ACIDUM CARBOLICUM. See Phenol.

ACIDUM HYDRIODICUM DILUTUM (U. S. P. 10%). Used in doses of 5 to 15 mL .

Syrupus acidi hydriodici (U. S. P. 1% by weight). Used in doses of $\frac{1}{2}$ to 2 $f\ddot{o}$.

This rather unstable but valuable agent is indicated when iodine in a nascent state is desired. See Iodine.

ACIDUM HYDROCHLORICUM DILUTUM (U. S. P. 10%). Tonic, refrigerant, antiseptic, and to counteract phosphatic deposits in urine.

The symptomatic indications usually calling for this acid are the deep red tongue with dusky red mucous membranes.

In typhoid conditions generally, and where there is a scanty secretion of gastric juice, it is a useful agent in doses of from 5 to 20 drops, well diluted. Given before meals, it is effective in controlling excessive secretion of gastric juice.

ACIDUM NITRICUM DILUTUM (U. S. P. 10%). Tonic, antiseptic, astringent, and alterative. It stimulates the intestinal glands. In doses of from 5 to 20 mL , well diluted, it is useful in chronic hepatitis and intestinal indigestion and when oxalates are deposited in the urine. Where diarrhea persists after an attack of indigestion, it is a most useful remedy. Where constipation exists, hydrochloric acid is preferable.

In small doses (1 to 5 mL) the dilute acid is alterative, markedly stimulating metabolism. For this reason its prolonged administration in small doses is indicated in chronic rheumatism, syphilis, old ulcers, chronic bronchitis with profuse expectoration, and in chronic liver complaints as an adjuvant to other treatment.

ACIDUM PHOSPHORICUM DILUTUM (U. S. P. 10%). Tonic and refrigerant; stimulates the nutrition of the nerve tissues, eliminates insoluble phosphates, and stimulates the sexual function. Dose, 20 to 60 mL .

In small doses (5 to 10 mL), combined with a bitter tonic, this agent serves very well in the subjective and

often imaginary pain and distress of depressed and irritable persons verging upon hysterical manifestations of the quiet, stubborn type. In small doses it is a valuable tonic to rapidly growing young people under the mental stress of school and college work and in the debility following acute disease. Some homœopathic surgeons assert that very small doses will relieve the peculiar neurosis in the stump sometimes following amputation.

ACIDUM PICRICUM. Yellow crystals, odorless, and intensely bitter. It is soluble in alcohol, ether, and chloroform, and slightly so in water. It is poisonous, acting as an irritating depressant, causing profuse diarrhea, convulsions, and collapse. The antidote is albumin. It is incompatible with all oxidizable substances, albumin, alkaloids, etc., and with sulphur and phosphorus is explosive. Never apply to the skin either in substance or in ointment, as toxic results may follow. The maximum dose is 5 grains, and it may be administered safely in doses of 1 grain in trichiniasis, but its general use internally as an antiperiodic and antiseptic cannot be commended in view of its toxicity.

Externally, it may be applied to burns of not very great superficial area, using $\frac{1}{2}$ to 1% hydro-alcoholic solution for only a few minutes, then covering with cotton. Do not renew application more frequently than once in three days. It controls pain and rapidly promotes healing, but is an agent to be used with the *greatest of care* and not at all in extensive or deep burns.

In small doses it has been employed in degenerative changes in the spinal cord, but the present writer regards it very unfavorably.

ACIDUM SALICYLICUM (SYNTHETIC) forms a very perfect *chemical* substitute for salicylic acid prepared from oil of wintergreen. Physiologically, the actions of the

two substances are not identical, although somewhat similar. Therapeutically, the synthetic acid serves admirably as a cheap substitute for true salicylic acid, and may be employed in the same dose and for the same indications, provided the patient is robust and has a stomach not readily disturbed. It is a very efficient antiseptic.

ACIDUM SALICYLICUM (FROM OIL OF WINTERGREEN). This is the substance upon which the reputation of salicylic acid is based, and many discriminating physicians will not employ the synthetic acid internally. Synthetic oil of wintergreen has been prepared and synthetic salicylic acid purporting to be true acid has been made from it. This is a fraud upon the part of the maker that has vastly complicated the already much involved therapy of salicylic acid. A conservative view of the matter makes it appear that the natural acid produces less irritation than does the synthetic, is eliminated more rapidly, and has a more regular and reliable influence where the temperature is elevated.

Salicylic acid produces tinnitus, a reduction of reflex action, depression of cerebration, reduces temperature, is diaphoretic and antiseptic, and is apt to irritate the kidneys.

The unaltered acid is employed in ulcerations and cancerous conditions of the stomach and in foul breath and offensive expectoration. It is also used locally in various conditions. The average dose is about 7 or 8 grains.

Sodium salicylate is usually preferred for internal administration in rheumatism, sciatica, lumbago, and for its supposedly alterative properties.

In small doses salicylic acid is employed in tonsilitis, giving 1 or 2 grains every two hours. It is highly efficient where there is a septic influence or the follicles of the tonsils are involved. Homœopathic physicians assert that

1-10 gr. doses relieve many of the symptoms of Ménière's disease.

Externally, salicylic acid is used in the treatment of indolent ulcers, cold abscesses, chilblains, pruritus, and many skin affections.

ACIDS OF MINOR THERAPEUTIC IMPORTANCE. DILUTE ACETIC, refrigerant and astringent, 30 m; CAMPHORIC, antiseptic in cystitis, gonorrhea, etc., 15 gr.; CITRIC, anti-scorbutic and refrigerant, 7 gr.; HYDROCYANIC, antispasmodic in small doses (see *Amygdalus persica*); LACTIC, caustic applied 50 to 80%; internally in dyspepsia, diarrhea, and diabetes, 15 to 30 m, well diluted; DILUTE NITROHYDROCHLORIC, in jaundice, biliary calculi, etc., 15 m, well diluted; OXALIC, emmenagogue and sedative, $\frac{1}{2}$ gr.; SULPHURIC (aromatic), 15 m, diluted; TANNIC, astringent and styptic, 5 to 10 gr. styptic collodion, 20% tannic acid, glycerite and ointment the same; TARTARIC, refrigerant and anti-scorbutic, 10 gr.; TRICHLORACETIC, escharotic, astringent, and hemostatic; used to remove venereal and other warts, nævi, pigment patches, papillomata, etc. (full strength). As astringent and hemostatic, 1 to 3% solution.

ACONITINA (U. S. P.). *Aconitine*, an alkaloid obtained from aconite (crystalline). Antineuralgic, diuretic, sudorific, and anodyne. Dose, 1-400 gr. several times a day, with caution. Externally, 1 to 2000 to 1 to 500 parts of lard. Never use upon abraded surfaces, as too toxic.

Alkaloidal granules of aconitine are not made of this potent U. S. P. preparation, but of the soluble *amorphous aconitine*, which is 1-15 as powerful, but, in less degree, is possessed of the same characteristics. Since aconite contains aconitine, pseudo-aconitine, aconine, pseudoaconine, picraconitine, and aconitic acid, it is readily seen

that no alkaloid really represents the full therapeutic range of aconite.

ACONITUM, Aconite. For the toxic action of this drug consult the standard works. It is too dangerous a drug to employ in doses verging upon the toxic, and especial care should be exercised when the fluidextract or the stronger tinctures are employed. Lloyd's aconite is especially toxic, $\frac{1}{2}$ ml being the maximum medicinal dose. In employing it, it is best to dilute it with nine parts of 76% alcohol.

Large medicinal doses, according to Bartholow, produce gastric pain and nausea, reduce the number and force of the heart beats, and lower arterial tension; there is increased action of the skin and kidneys, some muscular weakness, and sometimes diarrhea or vomiting. These large doses are seldom employed except where muscular spasm accompanies sthenic febrile states. (Tr. 20 ml, ec. tr. $\frac{1}{2}$ ml.)

Moderate medicinal doses, according to Hare, exercise "no marked effect on any part of the organism save the circulation, which becomes somewhat slower by stimulation of the vagus centers and by the drug acting as a sedative to the heart muscle itself." He suggests its employment, broadly, in the early stages of all acute inflammations, and externally as an anodyne application. He opposes the administration internally of either aconitine or Fleming's tincture. (Tr. 3 to 10 ml.)

In small doses aconite is a sedative, indicated when the pulse is small, hard, sharp, and quick with suppressed secretions and chilliness upon slight exposure. (Tr. 1 to 3 ml at a dose, ec. tr. 5 ml to aqua f $\ddot{\text{z}}$ iv, giving teaspoonful doses. The imported mother tincture is a superior preparation used in 1 to 3 ml doses.)

A high-grade tincture of aconite is one of the most

generally useful of remedies, indicated in the initial stage of fevers generally, and particularly in the exanthems and simple fevers of childhood. It is useful in capillary engorgement, and especially so if alternated with small doses of belladonna. Aconite retards exudation, suppuration, and induration. In acute congestions, nervous palpitations, the first stage of enteritis with fever, myalgia, otitis, suppression of menses from cold, and catarrhal inflammations of mucous membranes generally, it is a remedy for which we have no real substitute.

ADONIDIN, a non-nitrogenous, colorless, odorless, and very bitter amorphous powder derived from Adonis vernalis. It increases arterial tension, is mildly diuretic, and acts promptly. It is valuable in mitral insufficiency and interstitial myocarditis. It is recommended in dyspnea, in nicotine poisoning, and chronic diffuse nephritis.

The dose of Merck's adonidin is 1-16 to $\frac{1}{4}$ grain. It is conveniently administered in the form of a tablet triturate.

ADONIS VERNALIS, *Pheasant's eye*, excites the inhibitory nerves of the heart at the central end; but large doses, long continued, are apt to paralyze the peripheral end of the vagus. The accelerating nerves are excited. The logical outcome is that this very energetic remedy, or adonidin, should be very carefully employed. Personal experience has taught the present author to depend upon this drug to give prompt results where indicated, and also to produce great discomfort when administered to persons having only temporary functional heart disturbances. (F.e. 1 to 2 m, carefully employed.) Do not give to children.

In small doses this agent has acted remarkably well in my hands in cases of venous engorgement and weak heart giving rise to varicose ulcers. Administer continuously

for several weeks, 1-3 to $\frac{1}{2}$ m doses of the ec. tr. or f.e., or $\frac{1}{2}$ grain doses of the ix trituration of adonidin.

ADRENALIN, the blood-pressure-raising principle of the suprarenal gland and almost the exact physiological opposite of glonoin. Both of these substances demand careful and detailed study in order to intelligently employ them internally.

Adrenalin is probably the most efficient hemostatic and astringent known. Its surgical and special uses are many, but it is principally employed in hay fever ("adrenalin inhalant") and in iritis, conjunctivitis, and inflammations of the tonsils and larynx in solution (as chloride) in 1 to 10,000 or 1 to 1000 of solvent. Internally, as a heart stimulant and in Addison's disease, 5 to 30 m of 1 to 1000 solution. Its internal administration should not be lightly entered upon, but it is valuable if used *strictly within its indications*.

ÆSCULUS HIPPOCASTANUM, *Horse Chestnut*, is tonic, astringent, febrifuge, antiseptic, and narcotic, but is rarely employed except in congestion of the colon, rectum, and pelvic viscera. Its tonic action is upon the cerebro-spinal system, but it is inferior to nux vomica in this regard. As a narcotic it acts similarly to opium, but is more feeble. It acts upon the portal circulation and lessens the caliber of the rectal capillaries, thus favorably influencing hemorrhoids, and more especially the large dry locally.) If the administration is prolonged give ④ 1 m t.i.d.

Aesculus glabra, or *Ohio Buckeye*, is a more toxic agent than the above-described remedy, more profoundly exerting its influence upon the nervous system. Its uses are similar, but it is to be preferred only when the action is to be directed deeper than the rectum; consequently, in

congestions of the uterus and of the portal system it is of service in many cases.

Regular physicians have never appreciated *æsculus* for the very tangible reason that nearly all fluidextracts have been made from the dried bark, whereas it is the nut or fruit that is active. The sectarian tinctures are made of the recent nut and are highly active. The faint, anti-periodic properties possessed by the bark are of very little moment. In the popular mind, buckeye has long been esteemed in the treatment of rheumatism. Really, it has very little influence upon true rheumatism, but will relieve the backache affecting the sacrum and hips caused by portal congestion or by being upon the feet too much.

ÆTHUSA CYNAPIUM, *Fool's Parsley*, is generally regarded as being highly toxic, but has not been adequately investigated.

In small doses it has long enjoyed some reputation in the gastro-intestinal catarrh of bottle-fed babies. It appears to act best when the trouble is incidental to irritation of the nervous system. While it cannot be regarded as a thoroughly reliable remedy, and without antiseptics in alternation with it usually dismally fails, yet it appears that 1 ml doses of the first decimal dilution in alternation with 1-1000 grain doses of arsenite of copper is a fairly efficient treatment.

AGARICUS MUSCARIUS, *Fly Agaric*, a poisonous fungus. This substance in attenuation is employed by some homœopathic physicians in various forms of cerebral excitement and the delirium of fevers (1 ml of the 1x or 2x), but it has no established place in therapeutics and is dangerously toxic. So far as known, its action largely depends upon the contained *muscarine*. Merck's muscarine nitrate, made up in alcoholic solution and employed in doses representing 1-30 to 1-15 grain of the nitrate,

is useful in night sweats and diabetes insipidus and to oppose the action of atropine, but the tincture of the fungus would better not be used in therapeutics. *Agaricin* represents it and can be employed in doses of $\frac{1}{4}$ to 1 grain, but is uncertain in action.

AILANTHUS GLANDULOSA, Chinese Sumach or Tree of Heaven, a common shade tree.

In large doses ailanthus depresses the functions of the brain and spinal cord, and its only successful employment in such doses is to expel tapeworm. For this purpose it is used in decoction.

In small doses (ec. tr., $\frac{1}{2}$ to 1 m; ④, 1 to 5 m) it is one of the most direct of vegetable alteratives with antizymotic properties and valuable in malignant forms of scarlet and other fevers, diseases with irritating and septic discharges, septic sore throat, and in adynamic septic conditions generally. It does well in alternation with whatever medication is demanded, but it does not combine well with other drugs except the bitter tonics. It is incompatible with the salts of iron and lead. The fluid-extract must be given in doses not less than 5 m, since it is made from the dried bark and the volatile principles are largely absent. This drug was at one time much employed in regular practice, and it is worthy of more general employment now, especially since recent investigation has shown its real activity to reside in a volatile oil dissipated almost entirely in the preparations usually employed. It is with regret that we are unable to commend its fluidextract, since regular physicians naturally prefer to use drugs obtained from non-sectarian sources.

ALETRIS FARINOSA, Star Grass, is a constituent of many of the more or less valuable proprietary "female restoratives" offered to physicians. It is one of a class of remedies roughly classed together and usually pre-

scribed in a hit or miss fashion. This should not be, and we will endeavor to give in this volume the definite indications for these agents separately.

Aletris should be employed in *anemic and relaxed conditions in the female pelvis associated with poor digestion.* Adding to this will only cloud the subject. (F.e., 10 to 20 m.)

ALLIUM CEPA ♀, a tincture made from a very acrid red onion. Eliminating all hypothetical matter, this tincture has been found of real value in the colds of vocalists in which the greatest annoyance is experienced upon entering a warm room. Give doses of 3 minims in diluted glycerine.

ALNUS RUBRA, *Tag Alder*, in large doses of the fluid-extract (20 to 60 m) is alterative and tonic, improving nutrition and elimination.

In small doses (ec. tr. 5 m) it has given moderate satisfaction as an alterative in pustular and acute eczematous diseases of the skin.

ALOES AND ALOIN enter into many cathartic formulæ, and, very properly, are rarely prescribed in large doses in an uncombined state. The average single dose of aloes is 4 grains, and of aloin 1 grain.

In small doses (1-10 gr. granules of aloin) it is useful in re-establishing physiologic equilibrium in overdosed persons who insist upon taking medicine. Useful in portal congestions and the troubles of phlegmatic beer drinkers and persons who overload themselves with starchy food and sweets. In still smaller doses it will often relieve a sense of insecurity in the rectum, but quite as often fails to do so.

ALUMEN, *Alum*, in *large dose* (3i) emetic. *Moderate doses* (5 to 15 gr.) astringent, used in night sweats and

diarrhea. Locally, astringent, and styptic. *In small doses* (1 gr.) has been used with reputed success in whooping cough where there is excessive expectoration and in the bronchial catarrhs of the aged.

AMMONIUM BROMIDE, a nerve sedative useful in cerebral excitement due to exhaustion or an overworked state of the nervous system. Owing to its ammonia base, it is especially applicable when a nerve sedative is indicated in asthenic conditions. It combines well with tonics (2 to 20 gr.).

AMMONIUM CARBONATE, a highly useful cardiac stimulant useful in collapse, surgical shock, syncope, and in the depression following profound anesthesia. It combines well with digitalis in this connection. Dose, 10 to 20 grains in elixir or flavored syrup.

In moderate doses (5 to 10 gr.) valuable as a stimulating antacid, as in hysteria with acid eructations and in sick headache.

In small doses (1 to 5 gr.) a stimulating expectorant, used especially in the latter stages of bronchitis and in pneumonia.

In febrile conditions with feebleness it is a stimulating diaphoretic, used in small and frequent doses in scarlet fever, measles, and erysipelas.

AMMONIUM CHLORIDE. *In large doses* (20 to 30 gr.) it has been advocated by Anstie, Ringer, and others in the treatment of neuralgia of a rheumatic or malarial type. Its administration must be pushed.

In moderate doses (10 to 15 gr.) it is highly recommended in jaundice from catarrh of the bile ducts, since it increases and liquifies secretions.

Catarrhs of all kinds are amenable to its influence, the dose depending upon the amount and character of the exudate.

In small doses (1 to 5 gr.) it is a valuable stimulating expectorant, combining well with other substances, and so well known as to demand no extended comment.

AMMONIUM IODIDE is asserted to be less irritating and depressing than is potassium iodide. Otherwise, the two salts are practically identical therapeutically. Dose, 3 to 10 grains.

AMMONIUM VALERIANATE, a stimulating sedative somewhat similar to ammonium bromide, but is more readily tolerated by the stomach. It combines well with the bromides. Used in nervous headache, insomnia, and hysteria (2 to 8 gr.). The National Formulary elixir contains 2 grains to the teaspoonful.

AMYGDALUS PERSICA, *Peach Bark*, possesses slight sedative effects owing to a trace of hydrocyanic acid contained therein. The fresh infusion is of somewhat uncertain value in vomiting and "morning sickness."

In small doses (ec. tr., 1 or 2 ml) it is of moderate efficiency in the gastric irritation of children, but usually disappoints when administered to adults. For adults the dose must be much larger, but it is very much open to question whether hydrocyanic acid in safe doses really possesses much sedative influence upon the walls of the stomach.

AMYL NITRITE, antispasmodic, vasodilator. Used in angina pectoris, spasmodic asthma, epilepsy, syncope, dyspnea, and in poisoning by cocaine. Dose, 2 to 5 ml in brandy or by inhalation.

ANEMONE AND ANEMONIN. See Pulsatilla.

ANHALONIUM, a species of dwarf cactus known as the mescal button. Full doses act upon the nerve centers, increasing reflexes, and hence large doses should not be given to nervous patients.

In moderate doses (f.e., 2 to 10 ml) its action is somewhat similar to aconite at first administration, but this is soon followed by a "glow" in the extremities due to a free capillary circulation. This is followed by slight drowsiness and sometimes by natural sleep. The agent is a very promising one, and is worthy of employment in angina pectoris, dyspnea, and in cardiac feebleness.

In small doses (f.e., 1 ml) it is of value in brain-fag due to disturbed capillary circulation and accompanied by mild delirium and flashes of light. This is a good remedy for men under stress of business who lose sleep and smoke to excess, become irritable, have lapses of memory, and become worse as soon as they close the eyes and try to sleep. In these cases give 1 to 3 drop doses every hour or two and 5 drops when retiring. Men of plethoric habit may require larger doses.

ANTIMONII ET POTASSI TARTRAS, Tartar Emetic, a depressing emetic in large dose ($\frac{1}{2}$ gr. repeated in 20 minutes). Diaphoretic and relaxant in doses of 1-24 to $\frac{1}{8}$ gr. Expectorant and alterative in doses of 1-32 to 1-16 gr. It should seldom be employed in its first two indications, since it is very depressing.

Action in small doses (1-100 to 1-32 gr.). It relieves capillary bronchitis, especially in children, who should have minute doses frequently repeated. In adults, when the bronchi are loaded with mucus that is raised with difficulty, it is an efficient remedy.

ANTIPYRIN depresses the temperature and suspends nerve sensation. Ofttimes gives rise to prostrating sweats, and is exceedingly erratic in its influence. Fortunately, its toxic influences are readily overcome by the use of brandy, strychnine, and heat. The utmost of conservatism should govern its administration, and one should bear in mind its many incompatibles. The dose ranges

from 1 grain in children's diseases to the maximum of 30 grains for a robust adult. It should never be prescribed without keeping the patient under observation.

APIOL, in doses of 15 to 30 m_l, is an antiperiodic employed in malaria. In doses of 5 to 10 m_l it is emmenagogue and is employed in dysmenorrhea. It is administered in capsules. It is a definite stearoptine of considerable value, whereas the so-called "liquid apiol" is an alcoholic extract of the parsley fruit.

APIS MELLIFICA, *The Honey Bee*. A tincture of the virus is employed. Internally administered it is a powerful diuretic, too irritating to be employed in large doses, and producing vertigo, photophobia, emesis, strangury, and disturbances of circulation and respiration if given in toxic amounts.

Lloyd's tincture of apis, 2 m_l, four or five times a day, is much esteemed in hematuria.

Small doses ($\frac{1}{4}$ to 1 m_l) are prescribed in suddenly appearing dropsy, edematous conditions of the throat, in serous effusions, in retention and suppression of urine, and in urinary incontinence.

In the minute doses employed by the homœopaths the response is too slow, although their lower attenuations will relieve an irritable bladder and finally increase the flow of urine. This agent must be used with care, and must not be brought into contact with excoriated surfaces.

APOCYNUM CANNABINUM, *Canadian Hemp*.

In large doses apocynum is a harsh hydrogogue cathartic and emetic and should not be employed. The fluidextract of the dried root is official, and may be employed in doses of 10 to 15 m_l, but candor compels the admission that it is a very uncertain preparation, its value depending upon how recent a root is employed. Those

whose use of this drug has been limited to the fluidextract have missed its finer attributes and should try again. After large experience with the drug it has impressed me as a highly useful addition to our resources if employed in proper dose. In large dose the decoction is the safer preparation. It should be made from the fresh root and given carefully in teaspoonful doses.

In moderate doses it has a dual influence. First, it is markedly diuretic, causing a flow of limpid urine without irritating the kidneys. In dropsy caused by non-action of the kidneys, and even in acute renal inflammation where dropsy occurs, as in post-scarlatinal nephritis, it is highly valuable, but remedies must be administered with it to overcome inflammation.

Second, it is a heart tonic, increasing the strength of the heart muscle and improving the arterial tonus. While similar in action to digitalis, it is not cumulative.

Its combined influence is such as to render it most useful in atonic conditions of the blood-vessels permitting exudation and causing dropsy. Any edema of the cellular tissues is rationally treated with this agent as well as effusions into nerve sheaths and joint tissues. This indicates its utility in sciatica, rheumatic neuralgia, and all localized effusions accompanied by asthenia. Dose (ec. tr., $\frac{1}{4}$ to 5 m, carefully increased, or 0, 5 to 15 m, or for short periods, 20 to 30 m). This is a drug that influences some persons much more readily than others, and it is best to commence with small doses in every case. Purgative effects supervening, it is time to reduce the dose. The distilled extract of fresh apocynum is of considerable service in doses of 1 or 2 teaspoonfuls.

APOMORPHINE HYDROCHLORATE. Emetic 1-10 gr., hypodermatically 1-16 gr. Do not use in opium poisoning or with children. Hypnotic, hypodermatically, 1-30 gr.

Expectorant 1-60 gr., but not to be commended. The homœopaths assert that minute doses aid in treating seasickness.

AQUÆ. See Waters, Medicated.

ARBOR VITÆ. See Thuja.

ARGENTI NITRAS, *Silver Nitrate*. Of doubtful utility internally in large doses for gastric ulcer, etc. Possibly in $\frac{1}{8}$ to $\frac{1}{4}$ grain doses is applicable in gastro-intestinal catarrhs. It has been recommended in this dose in epilepsy, locomotor ataxia, and other diseases of the nervous system; but this is simply borrowing from the homœopaths, who have employed the agent in this manner for many years and probably get better results from their small doses than $\frac{1}{8}$ grain doses would give, as this dose will ultimately destroy hemoglobin and impair nutrition. In the opinion of the writer, 1-100 grain is enough to cover any indication to which this agent can be applied in chronic states. Its internal therapy is in an unsatisfactory status.

Externally, silver nitrate is of value, in 2% solution, in gonorrhea; in vesical catarrh, 1 or 2 grs. per ounce; in posterior urethritis, 5 to 10 drops of a 1 to 4 grains to the ounce solution injected with deep urethral syringe; in ulcers of the mouth, from 10 grs. to ounce up to saturation; in purulent conjunctivitis, 1 or 2 grains to the ounce; as a caustic, full strength.

ARISTOL. Action similar to iodoform. A satisfactory and safe antiseptic used in 10% ointment up to full strength powder, and can be administered hypodermically, which has been done with reported good results in tuberculosis. Use 1 part of aristol to 100 parts of sterilized oil of sweet almonds for hypodermic use. Iodine is really

one of the most truly effective antiseptics. Aristol is dithymol di-iodide, and should be kept in dark bottles.

ARNICA has in the past been employed as a stimulating embrocation to contusions. It has been displaced by more effective applications. When used it should be quite dilute, since it induces erysipelatous inflammations if used in a concentrated state. The 1905 U. S. P. tincture, 20%, is directed in doses averaging 15 mL internally, but for no very well-defined indications. Arnica is a badly used and consequently much-abused drug. It is an acro-narcotic poison in large doses, and of what legitimate use the usually prescribed doses are in therapeutics is a mystery to most physicians.

In small doses it is readily understood so far as theory is concerned, but practically there is a wide variation of opinion as to its uses. Physiologically, small doses act somewhat like phosphorus, and are stimulant to the spinal nervous system. The nerves of the sphincters and of end organs are stimulated, and there is an action not well understood upon the striated muscular fibres.

It would thus appear to be indicated in asthenic continued fevers as a nervine. Its known value in paralysis of the optic nerve would suggest its use in other forms of paralysis of peripheral nature and in conditions of threatened paralysis. Its action upon the sphincters seems to be borne out therapeutically in the many favorable reports of its power, in small and frequent doses, of restoring the ability to control the urine and feces. Its action upon the striated muscles has suggested its use in myalgia, pleurodynia, and the muscular pains of over-work and exhaustion, and immediately following child-birth.

Give in doses of 1 or 2 mL of the tincture.

ARSENIC BROMIDE is used in doses of 1-60 grain in diabetes, syphilis, and herpetic eruptions.

ARSENIC IODIDE, in doses of 1-60 to 1-15 grain, is used in the treatment of cancer, scrofula, and obstinate skin lesions, and as an ointment (3 grains to the ounce) to reduce tubercular swellings.

In small doses (1-1000 to 1-100 grain) where there are chronic irritating discharges of a watery and offensive character, as in old nasal catarrh and catarrh of the middle ear, pyemia, tubercular sores, and in scrofulous ophthalmia.

ARSENI TRIOXIDUM, *Arsenous Acid, White Arsenic.* The U. S. P. Liq. acidi arsenosi is a 1% solution of white arsenic. The well-known Fowler's solution is of the same strength. These preparations are all of similar therapy, and are antiperiodic, antiseptic, and alterative.

In doses of 1-30 to 1-15 grain arsenous acid is valuable in neuralgia of the fifth and intercostal nerves, periodic neuralgia, chorea, paralysis agitans, chronic arthritis, malarial cachexia, enlarged lymphatics, obesity due to defective assimilation, diabetes of hepatic origin, albuminuria, eczema, lichen, psoriasis, and other skin lesions.

In general, it may be said that *moderate doses* of arsenic are indicated when there is defective nutrition with deposits of low or imperfect albuminoid material. Its antiperiodic influence is marked, but it should not be employed in doses of any size where there is irritability of the nerve centers of an acute character.

In small doses arsenic is regarded as a vital stimulant, and is used in states of debility, exhaustion, and restlessness, and where burning pain and prostrating diarrhea exist. Small doses are applicable in the degenerative changes of aged persons, bronchitis with burning expect-

toration, irritative dyspepsia, cirrhosis of the liver, reflex vomiting, some cases of chronic diarrhea, and in skin rashes occasioned by indigestion (1-1000 to 1-100 gr.).

ARSENITE OF COPPER. See Copper Arsenite.

ASAFOETIDA. A mildly stimulating nerve sedative, somewhat antispasmodic, and is sedative to the mucous membranes.

In large doses (tr. 30 ℥, U. S. P. Pilulæ asafœtidæ, 2 or 3 pills; U. S. P. Emulsum asafœtidæ, 4 fʒ, or enema of 2 or 3 times this amount) it is employed in spasmodic and hysterical conditions with tympanites. It has sedative properties valuable in reflex and spasmodic coughs and some cases of la grippe.

In small doses it has no established place in therapeutics, although it is asserted to relieve the throbbing nightly pain of caries and periostitis. One grain pills given to a nursing mother twice a day will oftentimes relieve the colic of the babe.

ASCLEPIAS TUBEROSA, *Pleurisy Root*. This is an eliminative agent acting upon the sudoriparous glands. It is mildly antispasmodic and carminative. It is a feeble but useful remedy.

In large doses (f.e. or ec. tr., 15 to 60 ℥) it is quite effective in acute pleuritis and in tight and painful coughs and in acute rheumatism, but should be combined with other remedies indicated and not depended upon alone except in passing ailments.

In moderate doses (f.e. or ec. tr., 5 to 10 ℥) this drug meets its real field of utility, and especially so in the diseases of children. It is a remedy that never depresses, and its carminative properties especially adapt it to children of tender age. With them it is distinctly expectorant, and increases secretion from the serous mem-

branes first, then from the mucous membranes, and lastly from the skin. Minute doses of aconite facilitate its action. Instead of giving Dover's powder to children, give asclepias, ipecac, and camphor in combination and the results will be better. Personal impressions from my own experience lead me to believe that the opium in Dover's powder quite overshadows the action of the ipecac when administered to the babies. Asclepias is too feeble in action to be depended upon in small doses.

ASPIDIUM FELIX-MAS, *Male Fern.* The preparations of this drug are often uncertain, and, as it contains a toxic principle profoundly influencing the nervous system, great care should be taken to have a good preparation possessing to the full the somewhat unstable substance acting as a gastro-intestinal irritant. Saline or vegetable laxatives should follow its administration. *Do not give oil*, since it facilitates absorption of the toxic agent. Merck's oleoresin of male fern may be given in doses of 1 fʒ every half hour until 3 doses are taken. The oleoresin should be well shaken and administered in capsules. It is commonly followed by a dose of calomel and jalap, but this may not always be necessary.

ATROPINE. See Belladonna.

AURUM. See Gold.

AVENA SATIVA, *Oat.* Ellingwood, who has much confidence in avena, says of it: "Its selective influence is directly upon the brain and upon the nutritive functions of the organism, increasing nerve force and improving the nutrition of the entire system." It is indicated in neurasthenia, occipital headache, where phosphates are deficient in the tissues, in the prostration of brain workers, sexual neurasthenia, local and temporary paralyses,

menstrual headaches, and in the treatment of victims of the morphine habit.

Dose: Ec. tr. or any concentrated tincture, 15 ml., well diluted, 3 or 4 times a day. It acts in harmony with strychnia when a stimulant is needed. Exalgin and avena in combination have been used in chorea. Avena is not suitable for administration in small doses.

BALSAM PERU. Used externally as a stimulant to indolent raw surfaces, scabies, cracked nipples, chilblains, and tuberculous affections. Internally has been used in doses of 10 to 30 ml. in gonorrhea and phthisis, and in doses of 1 to 10 ml. in catarrh with copious purulent discharges.

BAPTISIA TINCTORIA, *Wild Indigo*. In large doses baptisia causes emesis and purgation, but is not an acceptable remedy in large dose. The preparations of the green or recent plant should be employed. Locally applied, baptisia has long been used in aphthæ and gangrenous sores.

In small doses (ec. tr. 1 to 3 ml., @ 3 to 10 ml., if continuously administered in smaller doses) it is useful in typhoid conditions if administered very early in the disease. This is due to its antiseptic qualities and its influence upon the intestinal glands. For the same reason it is useful in dysentery with dark, fetid discharges. It appears to oppose gangrenous tendencies, and has therefore been used in malignant forms of laryngitis, but the evidence in its favor in this direction is not very positive. Homœopathic physicians esteem this drug very highly, and use it in very much smaller doses than those noted here. For this reason I have very carefully watched its influence in the many cases in which I have used it. As to dose, I fail to get results in doses less than 1 minim.

of the tincture. It surely does have a marked influence in low fevers and in gastro-intestinal troubles with a tendency toward putridity. In conditions characterized by dark or purplish mucous membranes, dry and darkly coated tongue, and a dusky face with feeble circulation, the drug is useful and oftentimes highly valuable, but it can in no sense of the word be regarded as the sole or main-stay in typhoid fever. The drug is an antiseptic, alterative, and antizymotic, and has no especial influence upon the febrile process. Within its proper indications it is a valuable auxiliary to the more direct medication necessary for specific conditions. Begun early and steadily persisted in, it does much good, but is of little value when first given in advanced stages of disease.

BAROSMA. See Buchu.

BARYTA CARBONATE. This agent influences the glandular structures, and is indicated *in small doses* in general degenerative changes influencing the glands. It is especially useful in quinsy, suppurating tonsils, swollen glands in the neck, scrofulous children, indurated testes, and hypertrophied prostate. Give in 1 to 5 grain doses of the 2x trituration, or gr. 1-100 to gr. 1-10 and for a considerable length of time. Smaller dose preferable.

BARYTA MURIATICA, *Barium Chloride*. A cardiac tonic and alterative applicable *in small doses* in indurations and scleroses. It is employed in doses of 1-10 grain in arterial sclerosis and atheromatous degeneration, in narrowing of the cardiac orifice, in aneurism, indurated pancreas, and multiple sclerosis of the brain and cord. Smaller doses are effective if long continued.

BELLADONNA. Recent investigations and the introduction of scopolamin as an anesthetic prompts some chemical considerations regarding belladonna. For more detailed

data the writings of F. B. Kilmer more scientifically cover the subject than anything else of recent date.

There are two belladonnas in commerce to-day, the true *atropa belladonna* and Japanese belladonna or *scopolia*, the latter being used as an adulterant of the first. Therapeutically, they differ somewhat, although atropine is derived from both plants, and it probably makes little difference in the action of the atropine whether it is made from one or the other plant. There has been much controversy over the chemical educts of these plants, but it appears that hyoscyamine is the principal alkaloid of belladonna, but in the process of separation it is converted into atropine. As to scopolia, it yields more atropine than does belladonna and by the same process. It appears that hyoscyamine of belladonna and scopolamin of scopolia are very similar. We know that atropine, hyoscyamine, and hyoscine have the same formula ($C_{17}H_{23}NO_3$), but differ in the graphic formulæ owing to varying arrangements of the atoms component of the various alkaloids.

The practical points at issue are that belladonna and its educts are to be considered separately in therapeutic action. Prof. Frank Woodbury holds that atropine does not act upon the skin when locally applied as does belladonna, and it is recorded that a small amount of an atropine ointment applied to the unbroken skin has produced death in two hours. Mr. Kilmer says: "Observations made in our laboratory coupled with clinical observations made at our request, and reports from competent observers, have led us to emphatically believe that atropine does not represent the therapeutic value of belladonna."

We will first consider the alkaloids and include scopolamin, since scopolia will not receive separate consideration in this volume. It appears to be a connecting link botanically between *hyoscyamus* and *atropa belladonna*, and presents no defined advantages over these drugs.

ATROPINE is used internally as an antidote to pilocarpine, chloral, chloroform, fungus poisoning, and morphine. The dose is 1-120 to 1-60 gr., and as a mydriatic, $\frac{1}{2}\%$ solution. See works upon eye diseases.

HYOSCYAMINE, as employed in medicine, is commonly made from hyoscyamus, but is similar to that separated with much more difficulty from belladonna. It is employed as a hypnotic, mydriatic, and sedative in doses of 1-120 to 1-30 gr. The sulphate is employed in similar doses.

HYOSCINE and **HYOSCINE HYDROBROMATE** have a similar action to hyoscyamine, and are usually preferred to it. The use of these latter agents is principally to quiet insane persons. A sane person should be given doses of 1-400 to 1-200 grain of hyoscine or its salt, while an insane man may readily tolerate 1-30 gr.

SCOPOLAMIN and its hydrobromate have long been employed more or less in ophthalmology in 1-10 to $\frac{1}{8}\%$ solution, and in 1-60 gr. doses as hyoscine is employed. Chemically, it is similar to hyoscine.

SCOPOLAMIN AS AN ANESTHETIC. The mode of administration is liable to change to some extent after more extended experience, but at present three hypodermic injections are given to secure anesthesia. Each dose contains from 1-120 to 1-64 grain of scopolamin and $\frac{1}{8}$ grain of morphine. Give the first injection $2\frac{1}{2}$ hours before operating, the second $1\frac{1}{2}$ hours, and the final injection one-half hour before an incision is made, although the preparing of the patient may begin immediately after the third dose. Some cases require a little ether or chloroform, but the majority do not. There is usually six hours' sleep from these doses. The present author doubts the safety of such anesthesia.

The Preparations of Belladonna demand some atten-

tion. The U. S. P. solid extract is made from the leaves and can hardly be improved upon as a component of plasters, ointments, and for dispensing in pills and capsules. The average dose is 1-5 grain, or 10% in ointments. The fluidextract is also to be commended as carrying fully the medicinal elements of dried belladonna root. The Pharmacopoeia directs 1 minim as the average single dose. The tincture is made from the leaves, and the average dose is given at 8 ℥. It presents no advantages over the fluidextract. The mother tincture is slightly more active than the U. S. P. tincture. A word of caution should be given concerning Lloyd's ec. tr. belladonna, since special development of this product has evolved a highly toxic preparation. It is a first-class extract, but even 1 minim doses are dangerous if long continued. It is usually given in doses of 1-20 to $\frac{1}{2}$ ℥.

The selection of the preparation of belladonna is an important matter, and none of them should be indiscriminately prescribed, and caution should be observed in combining belladonna with chemical substances. It is a very complex organic body, and its alkaloids need very careful handling. An old fluidextract or one depositing a sediment should not be used. Atropine sulphate is generally to be preferred to atropine, since it is more stable. The present author takes a very conservative position as to its internal administration uncombined with morphine. Hyoscine and scopolamin are oftentimes used too recklessly. Especial caution should dominate their employment. Solutions of the alkaloids for hypodermic use should always be made up fresh.

In large doses belladonna may be a very useful or may be a very dangerous drug. The limitations of this volume preclude entering at length upon the physiologic action. In general, it may be said that large doses are

safe in cases of profound congestion and where stimulation of respiration can do no harm. It is well for young practitioners to carefully study belladonna and the pathology of congestive states before risking the large dose. When employed to limit excessive secretion, it is often necessary to push the administration, as in severe night-sweats or to check the lacteal flow after a still-birth, or where the babe cannot be suckled. When used as an antispasmodic, as in whooping cough or in spasm of a sphincter muscle, it may be necessary to run up the dose.

In moderate doses belladonna has a large sphere in antagonizing congestion, since it overcomes capillary stasis. A little reflection will suggest so wide a range of affections in which it is thus indicated that it would require many pages to enter into details. Do not prescribe belladonna for a blind list of diseases, but as indicated above, no difference what the disease may be, and it will be good therapeutics.

In small doses, frequently repeated, belladonna is useful in delirium, a drowsy state with flushed face and red eyes, difficulty in swallowing, pharyngitis and laryngitis, incontinence of urine, and in states in which the full physiologic action is not desired. It is not a remedy peculiarly adapted to small-dose medication, while minute doses are practically worthless except in the case of infants, to whom it seems peculiarly adapted. It also acts in very small doses upon the skin of blondes. Aconite given with or in alternation with belladonna most markedly intensifies its action in local congestions and in equalizing the general circulation. Thus given, very small doses of belladonna are effective. It has impressed me that the first decimal dilution of the drug is the weakest sectarian preparation of any value.

BERBERINE. The carbonate, phosphate, and sulphate are used in medicine as antiperiodics in doses of 5 to 15 grains, and as digestive stimulants and tonics in doses of $\frac{1}{2}$ to 2 grains. The carbonate is given in pills or capsules, while the soluble phosphate is given in aromatized solution.

BERBERIS AQUIFOLIUM stimulates the glandular structures generally, but especially those of the digestive tract. It is a valuable tonic alterative, and probably the best vegetable alterative in scaly and pustular diseases of the skin. It is a useful remedy to clear and soften the complexion in young women, and is employed with success in glandular indurations and ulcerations. Dose, f.e. or ec. tr., 5 to 15 m when an action upon the skin or glandular tissues upon the surface is desired. The salts of berberine are to be preferred to it as antiperiodics. Berberis combines well with other vegetable alteratives, but not with potassium iodide.

In small doses we get the primary action of berberis, which is upon the biliary and urinary tracts. It is useful in soreness of the lumbar region accompanied by turbid urine, and in subacute diseases of the liver of an atonic character, intestinal indigestion, and in convalescence from acute diseases of the digestive tract. (F.e. or ec. tr., 2 m.)

BISMUTH BETA-NAPTHOLATE. An intestinal antiseptic somewhat similar in action to salol. Dose, 5 to 15 gr. It is usually given in tablet form combined with other medicines. It is effective in the early stages of typhoid fever, Bismuth salicylate in the same dose is preferred to it by some clinicians.

BISMUTH SUBNITRATE is a slightly antiseptic astrigent employed in diseases of the gastro-intestinal mucous

membranes, controlling vomiting and diarrhea and neutralizing acids. It is also employed externally on wounds, ulcers, etc. Dose, 4 to 10 gr.

BLACK HAW. See *Viburnum Prunifolium*.

BROMINE is a nerve sedative and antispasmodic, and externally is caustic, antiseptic, and disinfectant. It is occasionally used internally in drop doses, but is not to be commended. The homœopaths use it in low dilution in diseases of the larynx and trachea, in mumps and laryngeal diphtheria. Undoubtedly, it exercises some influence in these directions, but as we have remedies so much more effective there is no occasion to employ bromine. In the absence of better antiseptics it was much employed in the treatment of hospital gangrene during the war between the States. BROMOFORM is the modern successor of bromine internally administered. It may be used for a number of laryngeal affections, but whooping cough is its real field. It is administered in hydro-alcoholic solution in doses of 1 to 5 m according to age. In the opinion of the writer, drosera, solanum, sticta, and other sedative antispasmodics are much superior to it in this disease. In my hands bromoform combined with "Malto-Yerbine" has acted better than in its usual form of administration.

BRYONIA ALBA. This drug is one peculiarly well justifying a book like the present volume. Bryonia was formerly much used in regular practice as an active hydrogogue cathartic, but it so frequently gave rise to inflammation of the stomach and bowels that it fell into disuse. The homœopaths took it up and developed a formidable list of subjective symptoms in the treatment of which it appeared to be of benefit. They have employed it in the treatment of "pain of a stitching, tearing char-

acter, worse by motion, better by rest," and those among them who do not practice "high dilution" have had remarkable things to tell about it. The eclectics then took it up, and have worked out its physiologic action in the small dose and placed its therapy upon a scientific basis. It is rapidly coming into use among regular physicians. From rather extended personal employment of bryonia it impresses me as a highly useful remedy. Only the recent plant, as found in England and parts of Europe, should be employed; consequently, the ordinary tinctures and extracts are disappointing and frequently are inert.

PHYSIOLOGIC ACTION IN SMALL DOSES. A mild excitement of the peripheral nerves and capillaries is produced, lessening arterial tension, quieting the sympathetics, and somewhat reducing the frequency of the pulse. It promotes the elimination of heat. It has an action similar to aconite upon inflammatory processes, and *opposes inflammatory dryness of mucous membranes, but its most marked influence is upon the serous membranes and their contained viscera.* In a word, bryonia does for serous membranes what aconite does for mucous membranes.

THERAPY. *In large doses* bryonia is too irritant a drug for safe administration, not only influencing the gastro-intestinal system but also seriously depressing the nervous system. I cannot forego, in this connection, calling attention to the fact that the so-called "law of similars" must be seriously warped to make bryonia fit purely homœopathic indications, and, on the other hand, the therapy in small doses very often cannot be predicated from the physiologic action of a drug in large doses.

In small doses bryonia is a highly useful agent in the treatment of thoracic and pleuritic acute inflammatory states with hacking cough and painful inspiration. Hence

its value in pleurisy, pneumonia, and acute bronchitis. In the early stages of these diseases it alternates well with aconite or non-stimulating expectorants, such as ipecac or asclepias. In typhoid pneumonia it is an excellent remedy, and in pleurisy it slowly removes effusion when present. Naturally, it cannot be expected to meet all indications alone. It possesses a marked advantage over aconite in the fact that its administration can be long continued, while aconite usually should not be. For this reason it is useful in chronic bronchitis, if combined with stimulating expectorants if secretion is free; or with sedatives, alteratives, or non-stimulating expectorants if it is scanty.

In abdominal diseases its influence is felt more especially in peritonitis, and in very mild cases it will control the pain without opium. Other necessary measures must not be neglected. A tender, sensitive liver is much relieved by this drug.

Pericarditis with exudation, congestive headaches, mild meningeal attacks with slight effusion, non-septic in character, rheumatic inflammation of the heart or pericardium, and orchitis are all diseases in which bryonia finds a place.

Rheumatic fever and arthritic troubles generally with serous effusion, as well as chronic rheumatic affections with stiff and swollen joints, all respond kindly to the drug. In muscular rheumatism it acts in harmony with cimicifuga.

Dose, ec. tr. 1-10 to 2 ℥, commonly $\frac{1}{4}$ to $\frac{1}{2}$ ℥ frequently repeated. ♀, 1 to 5 ℥. In children, or for long-continued use, the first decimal dilution does nicely, and there are many cases in which reducing the dose gradually gives better results than does increasing it.

BUCKEYE. See *Aesculus*.

BUCHU (sometimes called by its botanical name *Ba-rosma*). This agent very gently but effectively stimulates the kidneys, increasing the elimination of both the solid and aqueous constituents.

On the other hand, when debility of the urinary organs gives rise to a mere transudation of insipid or excessive volume of urine, buchu will tone the organs and reduce the excessive flow. In irritable states of the bladder it is one of the more certain remedies, a little belladonna combining well with it in such cases. In long-standing cases and especially in those following gonorrhœa or gleet combine with it the tincture of the chloride of iron. (F.e., 10 to 60 m.)

Probably the best preparation of buchu is the infusion. Macerate a tablespoonful of the leaves in half a pint of boiling water. A fluidounce or more of this infusion may be given three times a day.

BUGLEWEED. See *Lycopus*.

BUTYL-CHLORAL HYDRATE, or *Croton Chloral*, is similar in action to ordinary chloral, but is said to be less depressing. It is employed as a hypnotic in doses of 15 to 20 grains and as an analgesic in doses of 2 to 5 grains. Neuralgia of the fifth pair of nerves is favorably influenced by comparatively small doses.

CACTUS GRANDIFLORUS, or *Cereus grandiflorus*, a beautiful, large-flowered cactus growing wild in parts of the tropics where frost does not occur. Cultivated in hot-houses under the name of *Night-Blooming Cereus*, it but feebly develops its medicinal properties. Its sophisticants are *Opuntia Rafinesqui*, which has some slight value, and the species of opuntia growing upon our own southwestern deserts and which are of no established therapeutic value whatever. Cactus is dependent for its activity upon a resinous substance, soluble in alcohol, and of so un-

stable a nature as to thus far baffle analysis or separation except by slowly evaporating the tincture. This extract soon loses all activity. In consequence, the tincture of the fresh cactus must be employed, and attempts at making a fluidextract each minim of which represents one grain of dried cactus has most dismally failed. The "eclectic tincture" is of this strength, based upon *the green drug*. The "normal tincture" is semi-normal, and the "mother tincture" is of less strength. By drying cactus loses 95% by weight. Green plant fluidextracts are eligible, but do not differ from the tinctures. They are really tinctures in the case of this drug. *Anhalonium* is a species of cactus described in this volume under its own heading. *Cereus Bonplandi* is very nearly allied to *cereus grandiflorus*, and is similar in action. Homœopathic physicians are inclined to think *bonplandi* most effective in convulsive heart affections, while *grandiflorus* is best where there is constrictive pain.

Cactus was almost exclusively employed by the homœopaths until the eclectics took it up, and now is coming into general use. Regular physicians who have employed cactus in some reliable form are equally well pleased with it. It is a drug in which its employment is along similar lines by all schools of medicine.

Briefly stated, cactus influences the circular muscular fibres. *In large doses* it gives rise to more or less irritation, in which the sphincters are involved. It is useful in medicine for two reasons: first, because the muscular tissues of the heart and blood-vessels respond to it in doses never dangerous nor unpleasant; and secondly, because the nervous symptoms of functional heart diseases are much more favorably influenced by cactus than by any of the other cardiac tonics and stimulants. The nervous system is impressed by quite small doses.

Ellingwood says: "This remedy increases the musculo-motor energy of the heart, elevates arterial tension, increasing the height and force of the pulse wave. This is accomplished by increased heart action, stimulation of the vaso-motor center, and stimulation of the spinal-motor centers, increasing their activity and improving the general nerve tone. . . . It produces no irritation of the heart muscles, like strophanthus, or gastric irritation or cumulation, like digitalis.

It increases the contractile power and energy of the heart muscle through the intercardiac ganglia and accelerator nerves, and improves the nutrition of the heart." *

Cactus has impressed me as in no sense a substitute for digitalis, but is exceedingly useful in case of a debilitated heart muscle needing encouragement, but not the whip. It fills a place no other agent does in *functional* heart difficulties and *progressive* valvular inefficiency. It is a reliable remedy, not disturbing digestion in proper doses, and it gives a sense of ease to many a distressing heart case, leaves no after-drug effect, and is often preferable to older drugs. For the heart, give 1 to 6 $\text{m}\ell$ doses of ec. tr., 2 to 10 $\text{m}\ell$ doses of fluidextract, or 3 to 15 $\text{m}\ell$ Θ . Small doses, frequently repeated, act nicely.

Rubini, of Naples, who introduced cactus, claimed that it resembles aconite in action, differing in that it increases the strength and tone of the nerve centers instead of paralyzing them, as do large doses of aconite. He was probably correct in his claims. At all events, cactus in 1 $\text{m}\ell$ doses, frequently repeated, and even in less dose, is a true sedative where a rapid and feeble pulse accompanies a weak and exhausted nervous system. In asthenic fevers, in headaches with a feeling of constriction, anemia of the brain, nervous palpitation, in cold and clammy

* "Materia Medica and Therapeutics," by Finley Ellingwood, M.D.—The Chicago Medical Times Pub. Co.

hands and feet, and in other states in which the vaso-motors are at fault with more or less nervous irritation, cactus acts well in very small doses.

CAFFEINE acts upon the spinal reflex centers, stimulates cerebration, is a direct stimulant to the heart muscle and the respiratory center, and is diuretic.

It is employed in nervous headache (1 gr. caffeine every half-hour until relieved, or moderate doses of hydrobromate of caffeine compound), in weak heart action (preferably 5 to 10 drops hypodermically of the salicylate of caffeine solution *), but when no decided stimulation is desired the citrated caffeine in 2 to 10 gr. doses or moderate amounts of strong coffee. In uremic coma, caffeine should be used hypodermically.

CAJUPUT OIL. This is a diffusible stimulant indicated in the exhaustion of fevers, characterized by flatulence and fermentation in the bowels. Never give during the period of marked acute inflammation. Dose, 5 m.

CALCIUM SALTS. ACETATE has been successfully employed in continued small doses in inflammations of mucous membranes characterized by a membranous exudation. A convenient way to administer is in the 1X tablet triturate. CARBONATE, an antacid sometimes given to rickety children for long periods of time. Also in cases of impaired nutrition. Give in small doses. Lime-water is of the same therapeutic value. The precipitated calcium carbonate is a valuable antacid for children, indicated when the anus is red and sore. FLUORIDE, used by the homœopaths in indurations and threatened suppuration and varicose veins. They use the 3X usually. HYPOPHOSPHITE, a reconstructive of great value, contraindicated in fever, but given in 10 to 20 gr. doses in phthisis,

* Caffeine, 20 gr.; Salicylate of Soda, 17½ gr.; Water, 80 m.

rachitis, and defective nutrition. IODIDE, used in scrofulous affections and in adenoids. "Iodized lime" is used in croup. There is some difference of opinion as to dosage. My experience is to begin with small doses and increase rapidly if well tolerated. LACTOPHOSPHATE, stimulant and nutrient in doses of 3 to 10 grs. or 1 to 2 f3 of syrup. SULPHIDE, useful in nodular, glandular, and suppurative skin troubles, in boils, ulcerative, syphilitic, and tubercular lesions, fetid bronchitis, and in other states demanding sulphur. Dose, 1-20 to $\frac{1}{4}$ gr. triturated with sugar. The homœopaths call it HEPAR SULPHURIS, and give the 1x to promote suppuration and the 3x to 6x to prevent it.

CALENDULA, *Marigold*. This remedy has been used internally, and its tincture is official in 20% strength. What rational basis there may be for its internal administration has never been made very clear to me. Externally, it really does what arnica is reputed to do, and is in every way superior to the latter agent. It is applicable to open wounds and to burns, and serves to prevent contracting eschars owing to its tendency to produce exudation. The non-alcoholic calendula is a valuable antiseptic in surgery and gynecology.

CALOMEL. See under Mercury.

CALOTROPIS, or *Madar Bark*, is a remedy much in favor among the modern school of homœopaths. Their literature says it is a powerful alterative and increases cutaneous circulation. They use 5 m doses of the mother tincture in the secondary symptoms of syphilis and following a course of mercury, and very sensible writers of their school maintains that it recruits the constitution, removing anemia and healing the ulcers and blotches. The

primary anemia of syphilis is reported to yield to its influence. *In large doses* it is an irritant poison.

CALTHA PALUSTRIS, the "cowslip" of the garden, is recommended for uterine cancer. (Tr. 2 to 5 M, non-official.)

CAMPHORA. This substance is classified as stimulant, diaphoretic, sedative, expectorant, carminative, antiseptic, analgesic, and antipruritic. If this is all true, it is a wonderful remedy. It is used in an empirical manner, and it needs study. It is altogether too freely combined with other remedies, which it seems to modify in a manner not well understood. It must be borne in mind that camphor has toxic influences, causing cyanosis, delirium, vomiting, convulsions, and other symptoms of irritation of the brain.

In large doses there is much difference of opinion as to its range of utility. The fact is that camphor established its fame in the treatment of cholera. This is a condition in which a remedy would be slowly absorbed, and in which the functions of the nervous system are so depressed as to require an irritant to arouse them. To my mind this suggests that quite large doses of camphor might rationally be employed in states of collapse and in the stupor and exhaustion of adynamic fevers; but where the nervous reactions are normal and absorption is active, it impresses me that large doses have no place.

In small doses camphor is given in a host of affections, the indications of which are better met by other remedies. Limiting the indications to those well borne out in professional experience, we find that the successful use of camphor is to influence the nervous system either in large or in small doses. It succeeds in hysteria because it is a nerve sedative; in nervous headache, since it is due to prolonged mental strain as a rule, and camphor is a nerve

sedative that improves the nerve tone like cactus does the heart; in the first stages of a cold, because that stage of a cold is really a vaso-motor disturbance; in bronchitis, asthma, and whooping cough, because it is a sedative influencing the muscles as an antispasmodic in small doses, but causing tonic spasm in large, toxic doses; nervous vomiting and palpitation, because it is a sedative to nervous reflex action. Give in 1 to 5 ml doses of *Spiritus camphoræ*, or 1 to 5 gr. of *Camphora monobromata*. This latter preparation adds hypnotic influences to that of camphor, and is very valuable in nervous irritation from reflex causes.

Carbolate of camphor is made by mixing together and straining, after twenty-four hours' standing, 1 part by weight of carbolic acid and 3 parts of camphor. It is a superb antiseptic, but must not be mixed with water or glycerine. Use pure or in any proportion mixed with cotton seed oil or petroleum derivatives.

CANNABIS INDICA. This agent is sedative, narcotic, and anodyne, primarily exciting cerebration, but resulting in secondary depression not marked in character. It may be employed in a wide range of affections, but its greatest influence is exerted in painful, spasmodic affections.

This remedy is exceedingly useful in painful affections of the genito-urinary tract with tenesmus, priapism, strangury, or spasmodic stricture. This indication covers a wide range of affections. It is seldom employed alone, but in conjunction with antiseptics and agents to allay inflammation.

Cannabis indica is a safer and more truly satisfactory remedy than heroin or codeine as the narcotic element in cough mixtures, such as the syrup of white pine.

An assayed fluidextract may be given in doses of 1 to

3 ml. A good tincture is made by dissolving 1 ounce of the English extract in a pint of alcohol. Dose, 1 to 15 ml. Small doses of this drug, frequently repeated, usually give better results than do massive doses. The action is the same in any dose, varying only in degree.

CANTHARIS. An irritant diuretic and aphrodisiac. Externally used as a rubefacient and vesicant. In very small doses it is much employed by sectarian and somewhat by regular physicians in cystitis, irritable bladder, and nephritis, but we have so much better remedies that it must be considered as of secondary importance except in relaxation of the bladder walls. *Cantharidin* has been recommended in lupus and tuberculosis. (Tr., $\frac{1}{4}$ to 10 ml. Merck's cantharidin in 1 to 100,000 solution, using 1% alcohol in 99% water as solvent, and giving 5 to 40 ml doses, well diluted.)

CAPSICUM. This agent is of use in enfeebled conditions involving deficient innervation. It is used to restore nerve influence in mild forms of paralysis, as a stimulant in dipsomania, and in atonic states of the digestive organs. Externally, it is counterirritant.

CARBO LIGNI, Charcoal. Of value in flatulence with fetid breath, cardialgia from distention, fetid dysentery, and in some cases of passive hemorrhage from mucous membranes. The dose may be very large, but practically all that the remedy will do is accomplished by 5 or 10 gr. doses. It has been used in minute doses in various states, the supposition being that the soluble salts in charcoal had an influence upon the fluids of the body. There is no scientific basis for the employment of dilutions or triturations except that a trituration of equal parts of charcoal and sugar is an eligible way to administer the agent.

CASCARA SAGRADA, *Rhamnus purshiana*. This is a bitter tonic influencing to healthy action the gastro-intestinal tract, promoting the secretions of their glands, and increasing peristalsis. It is a valuable agent, but is of use chiefly in chronic constipation. Give of the fluidextract from 5 to 60 m. It has been commended in chronic rheumatic states and used in quite small doses, but has hardly justified itself in this connection.

CAULOPHYLLUM, or *Blue Cohosh*, is another of the indiscriminately used "female regulators." Its real field of utility is to allay *uterine irritability during the period of gestation*, thus preventing premature labor. It is a favorite remedy with the eclectics, and is overemployed by them. They use a solution of its active principle called "Leontin." It promotes normal menstruation in young women very efficiently. The ec. tr. is given in doses of from 1 to 10 m, and is really a high-grade fluidextract of this drug. The mother tincture is unnecessarily weak. A good fluidextract is made by several firms, but it is well to designate the make, since a poor preparation of blue cohosh is nearly inert. If used in too large doses it is apt to cause uterine contraction. *Caulophylin* in doses of $\frac{1}{4}$ to 1 gr. is commended by many physicians.

CAUSTICUM is a homœopathic potash preparation much esteemed by the "high dilutionists." It is used by them in arthritic and catarrhal affections marked by burning soreness or rawness. If it really has any true field of action it is in throat troubles with a raw, hoarse cough, where its action would be similar to that of capsicum. Possibly the low dilutions are of some little value in this connection. The mother tincture is irritant, and should be well diluted. Some singers employ the tablet triturate of this agent to strengthen the voice. Its value is problematic.

CEANOTHUS, *New Jersey Tea*. This is an old remedy that has been extolled in the past by all three schools of medicine as having a marked influence upon the spleen. If it has any such influence it is by virtue of the fact that it stimulates the portal circulation. In chronic inactivity of the liver it is of some utility, and it appears to possess some influence in malarial toxemia, in which the spleen is enlarged and the portal circulation at fault. That it specifically influences the spleen itself is not probable. (F.e., 5 to 30 M; ec. tr., 2 to 10 M.)

CEDRON, or *Rattlesnake Bean*, is employed, in small doses of the tincture, in malarial neuralgia and neuralgic pain around the eye or orbit, but there are not sufficient reports to verify the claims of the few persons who have used it.

CEREUS BONPLANDI. See Cactus.

CERII OXALAS is used by all three schools in the vomiting of pregnancy. It is a sedative to gastric irritation, and relieves spasmodic reflex vomiting generally. Sometimes it relieves whooping cough. In quite large doses it is a sedative to the nerve centers, and is employed in chorea. In vomiting it is given in doses of 1 to 3 gr., and in chorea up to the maximum dose of 8 gr. Very small doses of this drug are not employed.

CHAMOMILLA, *Matricaria chamomilla*. This is the German chamomile, and is in every way much superior to the Roman chamomile or anthemis nobilis.

This plant is widely employed by the physicians of Germany and by German people in this country. Our physicians have never appreciated it as it deserves, because they have given it in altogether too large a dose and because they have so often used the inferior Roman chamomile.

In large doses it is useful in dysmenorrhea, relieving pain and tending to lessen the formation of blood clots. Give freely in hot infusion.

In small doses it influences the sensory and excito-motor nerves, markedly relieving irritation and restlessness. In adults it relieves the nervous irritation of gestation and false pains, is a gentle tonic to the nervous system, and useful in nervous dyspepsia, periodical sick headache, and in nervous twitching of the face. (Ec. tr. or any good saturated tincture or fluidextract, 1 to 10 m.) The smaller doses are usually effective. I give 1 to 3 m as a rule, but frequently repeated.

In infantile diseases this agent finds its greatest field of usefulness. It is employed in difficult dentition, especially when the child is irritable and feverish, in acid diarrhea with green stools and restlessness, and in flatulent colic. Give 1 m doses, or, if mother tincture is used, 3 or 4 m. Small doses of the infusion are effective. Minute doses of aconite coöperate with chamomilla.

CHELIDONIUM, or *Great Celandine*, is one of the oldest remedies in therapeutics, but it was unwisely employed and fell into disuse. At present it is much esteemed by the eclectics and homœopaths.

In large doses it is a drastic cathartic, violent local irritant, diuretic, and vulnerary. In view of the experience of the profession in the past, its advocacy in large doses to-day is not very wise. Denissenko and others advocate its local use in the treatment of cancer. It is established that injections into and around the tumor of a mixture of equal weights of celandine extract, glycerine, and distilled water softens a tumor and tends toward its disintegration; but there follows a good deal of pain and some fever, and there exists much division of opinion as to the advisability of using celandine in this connection.

In small doses celandine is of considerable utility in the treatment of functional inactivity of the liver and sluggishness of the portal circulation with the long chain of direct and reflex symptoms engendered by such conditions. It is of value in jaundice and in conditions of alternating constipation and diarrhea. Its usefulness in the treatment of biliary calculi is well established. Constant pain under the inferior angle of the right scapula usually calls for celandine. It is a useful remedy if long enough continued. I get good results from 2 or 3 ℥ doses of the ec. tr., and use it in alternation with sodium phosphate.

CHIMAPHILA, *Pipsissewa*. An official drug used in acute and chronic catarrh of the bladder, in dropsy, and diseases incident to uric acid. It is a stimulating alternative and a good diuretic. (F.e., 10 to 60 ℥.)

CHIONANTHUS VIRGINICA, *Fringe Tree*. This is a bark very difficult of manipulation pharmaceutically, and hence most of its preparations are unreliable. The eclectics have long prized it very highly, and Prof. Lloyd has developed for them an extract more satisfactory than is the fluid-extract. It has been little used in regular medicine until a proprietary preparation brought it before the profession.

In large doses it is a mild cholagogue cathartic, safe in employment for a few doses. Ec. tr., 20 ℥ for four doses, and then 10 ℥ at a dose if necessary to continue.

In moderate doses (ec. tr., 5 to 10 ℥) it liquefies the bile, prevents the formation of calculi, and is probably one of the very best remedies for jaundice not due to occlusion of the duct or to malignant growths. It is very sure in its action in the jaundice of gestation. Its action in chronic liver disease is most happy.

In small doses it is combined with iris versicolor, and

alternated with sodium phosphate, if necessary, in the treatment of sick headache, bilious headache, and those due to menstruation. It is quite effective in this connection. (Ec. tr., 1 to 3 ml.)

CHLORALFORMAMIDUM, U. S. P. designation for *Chloralamide*. Hypnotic, sedative, and analgesic. The full adult dose I consider safe is 30 grains. Merck says 60 grains maximum. As a hypnotic it is slower in action than chloral, but somewhat safer. It does not irritate the heart and stomach to the same extent that chloral does. Its sensible and transient use leads to good results.

CHLORAL HYDRATUM. Hypnotic, antispasmodic, and analgesic. Employed in insomnia, spasmodic, and painful affections. Contraindicated in gastritis, heart affections, and the extremes of life. Adult dose, 5 to 20 gr. Tetanus requires large doses, as does every indication to cause muscular relaxation. Sleeplessness from mental exaltation requires full doses, while that due to exhaustion rather small doses. In delirium tremens small doses, repeated as necessary, give best results. In *very small* doses (1-10 to 1 gr.) it is employed in hives oftentimes with success. The homœopaths recommend minute doses for urticaria and a coldness of the body surface.

CHLOROFORMUM. Anesthetic and analgesic. Employed internally in colic, cramps, spasmodic affections, atonic quinsy, and sometimes to relieve pain (2 to 5 ml.). For its anesthetic properties consult the text-books.

CHRYSAROBINUM. Antiparasitic and alterative, used in psoriasis, herpes tonsurans, and pityriasis versicolor. Use in 5% ointment. Very dangerous to the eyes, or over large areas from absorption into blood.

CICUTA VIROSA, *Water Hemlock*. This highly toxic agent is used in dilution by the homœopaths in spasmodic

affections, such as singultus, trismus, tetanus, and convulsions. It is mentioned here chiefly to call attention to the highly toxic character of the mother tincture. The eclectics call a similar plant *Oenanthe* (q. v.), and it was formerly used by them in epilepsy generally, but is now used in epilepsy marked by anemia of the brain and cord. Their ec. tr. *Oenanthe* is toxic in 4 mL doses, and is given in doses of 1-20 to $\frac{1}{2}$ mL .

Cicutine, *Conicine*, and *Coniine* are practically identical, but differ from *Conium* (q. v.). The hydrobromate of coniine is used as an antispasmodic in regular practice in just about the same range of affections as the homœopaths use cicuta. The dose of the hydrobromate is 1-60 to 1-15 gr. The maximum dose is 1-6 gr., and is sometimes used in tetanus. This drug has been suggested in cerebro-spinal meningitis. The present author would urge great caution in its employment.

CIMICIFUGA RACEMOSA, *Black Snake Root*, *Black Cohosh*. It is sometimes called *Macrotys*.

In large doses (U. S. P. Tr., 1 to 2 f3; f.e., 30 mL ; ec. tr., 10 mL) it produces general relaxation, slows the pulse, and is diaphoretic. Sometimes these doses give rise to the cerebral symptoms. (Consult Bartholow.) Large doses are seldom indicated. The ec. tr. and other green root preparations are most active, and their doses are small.

In moderate and small doses cimicifuga is a most valuable remedy. It is employed in the aching and muscular soreness noted in the premonitory stages of fevers, and is usually combined with aconite in this condition. In neuralgia and muscular troubles of the heart, such as pericarditis, it is of value, and is sometimes used in the place of digitalis. Chorea is most markedly benefited by moderate doses. Ellingwood alternates it with small

doses of exalgine in chorea. Acute rheumatism and rheumatic fevers involving chiefly the muscles are quite amenable to cimicifuga. Nervous troubles, such as hysteria, menstrual melancholia, and incipient puerperal insanity, are within its range. The female reproductive system is much influenced by it, relieving irregular pains, promoting involution, relieving spasm or congestion of the muscular tissues of the womb during the menstrual epoch, and in rheumatic states of the uterine muscle fibers, bringing about a regular and painless action. Pain in the loins due to gonorrhea or spasmodic stricture is relieved by it.

In short, large doses influence the central nervous system somewhat like the bromides, and it acts in harmony with gelsemium, ergot, and bromides. In smaller doses its influence is to relax muscular tissues, and it coöperates with aconite, colchicum, and the salicylates. For the muscular action give f.e., 5 to 10 m; ec. tr., $\frac{1}{4}$ to 2 m; U. S. P. Tr., 10 to 20 m; @, 5 to 10 m. Green f.e. same as ec. tr. or slightly more.

CINA is the homœopathic name of a plant known as *Artemisia pauciflora*, and from which *Santonin* is derived. A tincture is made and is employed in intestinal irritations and a whole chain of symptoms referable to worms. They use the low attenuations and the tincture, and, when necessary, the ix trituration of santonin. Their tincture is quite effective if sufficient dose is administered. The older homœopaths used high dilutions of "Cina" for nervous and irritable children. See Santonin.

CINCHONA. Much has been written about cinchona and its alkaloids, but, as a practical matter of fact, quinine does nearly everything done by cinchona. In the indications in small doses some distinctions of minor importance might be mentioned. Quinine is undoubtedly *the* agent

to destroy the malarial plasmodium, but in debility from exhausting discharges and in atonic indigestion and nocturnal sweating it is thought that cinchona is preferable. Give 1 to 10 gr. doses of the powdered bark in capsules. The fluid preparations are so hard to make up nicely, unless one uses considerable alcohol as a solvent, that they are unsatisfactory except when the dose is very small. The homœopaths call it "*China*," and use small doses in practically all diseases marked by periodicity, and in feebleness from loss of blood, muscular relaxation, asthenic pneumonia, threatened abortion, hematuria, erysipelas, and vertigo. See Quinine.

CINERARIA, *Dusty Miller*, has enjoyed a somewhat dubious reputation in the treatment of cataract and corneal opacities by the "absorption method." The fresh juice is instilled into the eye, 1 or 2 drops four times a day, for several months. The method is probably entirely harmless. Different medicines have at times been recommended for cataract, chiefly phosphorus and platinum, but nothing practical ever came of it.

CINNABARIS. See Mercuric Sulphide.

CINNAMOMUM ZEYLANICUM, U. S. P. TRUE *Ceylon Cinnamon*. The official tincture is *not* the *true* cinnamon. Ec. tr. is a tincture of true Ceylon cinnamon. The true oil is also to be obtained, but is expensive. Oil and tincture of cassia or of saigon cinnamon is very inferior in therapeutic activity. The true oil is not official.

The true cinnamon is a most valuable agent in all passive hemorrhages, and particularly in uterine hemorrhage. It markedly tones the muscular structure of the womb and causes tonic contraction. Give of ec. tr. cinnamomum 10 to 30 ml., or of the true oil 1 or 2 ml. Equal parts oil of cinnamon and oil of erigeron in 3 to 5 ml. doses upon

loaf sugar is effective in passive hemorrhage. Cinnamon given in *alternation* with ergot gives better results in pulmonary hemorrhage and postpartum hemorrhage than does ergot alone.

COBALT has been given in small doses in neurasthenic spinal states and in seminal emissions. The 2x or 3x trituration can be procured from homeopathic sources, although the original use of it was not with them, I believe.

COCOA, *Erythroxylon Coca*. The official coca leaves must yield $\frac{1}{2}$ of 1% of alkaloids, and as the average dose is 30 gr. of the leaves, that is equivalent to 1-7 gr. of alkaloids per dose. The official "Vinum Cocæ" is 6½% coca. This is stated to show the fallacy of the contention that the use of coca does not involve the use of its alkaloids.

Coca is a nerve stimulant, muscle tonic, and invigorant, undoubtedly of use, but so much abused in the use as to make it questionable how much it should be employed by physicians. The seductive proprietary preparations of coca are an abomination, and do much harm.

COCAINÆ HYDROCHLORIUM. Dose, 1-16 to $\frac{1}{2}$ gr. Always begin with small dose. Never apply over 2-3 grain at any one time to a mucous surface.

Local uses—In eye, nose, and throat, 1 to 5% solution, and, in extreme instances, 10% if to small area. Carefully, with children. Urethra and bladder, $\frac{1}{2}$ to 4%. Ointments, 3 to 5 gr. to 3. Vomiting of pregnancy, 5% to cervix. Hay fever, 1 to 4% solution with cotton applicator. Hypodermically about teeth, 1 or 2%. Schleich's infiltration anesthesia, gr. $\frac{1}{2}$ to gr. 8 to fʒi. Rarely indicated in solution stronger than 5% for anything. Its internal employment is fraught with so much danger

from many points of view that such uses as have been advocated are wisely passed by in the work of the careful practitioner.

COCCELIUS INDICUS, *Fish Berries*. This agent is similar to strychnine in physiologic action, but the convulsions caused by toxic doses are less tetanic than are those of strychnine. It produces more stupor than does strychnine.

Therapeutically, it is used in much the same indications as nux vomica, and presents no advantages over it except it possibly is less irritating to the nerves. F.e. (not official), $\frac{1}{2}$ to 3 m. Pictrotoxin, 1-100 to 1-30 gr.

The homœopaths use its 3x dilution in indigestion, marked by great repugnance to food, headache with vertigo, and uncomplicated dysmenorrhea. They also value pictrotoxin in night sweats.

Coccus, *Cochineal*. The tincture of this well-known coloring agent has long been used in small doses throughout Germany in whooping cough where clear, stringy and ropy mucus is vomited. Some of our American practitioners add *Tr. Cardamomi Co.* to whooping-cough mixtures because of the cochineal contained in it. Personally, cochineal would never be depended upon alone. I add drosera to the *Tr. Cardamomi Co.*, and get encouraging results toward the latter end of the spasmodic stage.

CODEINE and CODEINÆ SULPHAS. Hypnotic, analgesic, sedative. Not used in case of severe pain. Greatest use in irritating coughs, where it has been very unwisely displaced by heroin by many physicians. Also used in ovarian pains, vesical affections, and in diabetes mellitus. Dose of either codeine or its sulphate, $\frac{1}{2}$ to 2 gr., or less if for continuous administration. Never give to young children. It is a very valuable agent in small doses. See Heroin.

COLCHICUM. This agent has come into much undeserved disrepute. It must be remembered that large doses are cathartic and produce a very feeble pulse and cool skin. It is a valuable agent, but has been given in altogether too large doses. It is only after the pulse and temperature are reduced to near the normal that colchicum acts well. It is more valuable in chronic than in acute forms of rheumatism. It should usually be preceded by a saline laxative, and seems to act peculiarly well in combination with cimicifuga. Use doses of f.e. (seed), 1 to 2 m ; tr. of seed, 10 m ; ec. tr., 1 m , and you will be pleased with its action. A really good fluid-extract is usually effective in doses of 1 m . Wine of colchicum is unnecessary. It impresses me as illogical to give wine to a rheumatic or gouty patient even in small quantities. *Colchicine* is used in doses of 1-120 to 1-30 gr. *Colchicine salicylate* in doses of 1-200 to 1-80 gr. These agents are very active, and should be employed with the utmost of conservatism.

COLLINSONIA CANADENSIS, Stone Root. This tough, fibrous root is exceedingly difficult of extraction, and the quickly made percolated fluidextracts of it are very inferior. It requires prolonged maceration, and only the green root should be used.

Collinsonia is a tonic to the digestive organs and to enfeebled muscular structures, particularly non-striated muscular tissue. For this reason, it influences the heart and blood-vessels.

In large doses it is the remedy in clergyman's sore throat and all straining of the vocal organs marked by aphonia, cough, and a sense of constriction. Dose, 15 m ec. tr., in simple syrup, four times a day.

In moderate doses Dr. John V. Shoemaker considers it an antispasmodic of great value in gastralgia. It is of

recognized value in catarrhal gastritis, and is usually combined with hydrastis. (Ec. tr., 5 to 10 ml.)

In small doses it is highly useful in hemorrhoids and relaxed conditions of the lower bowel with imperfect venous capillary circulation. I regard it as the most valuable internal remedy we possess in such rectal states. In cardiac debility, especially that associated with chlorosis, it is of value. It is not a heart stimulant, but adds tone to the heart muscle and blood-vessels. (Ec. tr., 1 or 2 ml.)

There is no reason why a slowly made fluidextract should not be as active as the ec. tr., but, as a matter of fact, few makers take proper care with this non-official drug. It is a very valuable remedy, and should be largely used.

COLOCYNTHIS. This is a peculiar drug, long misunderstood. The official Extractum Colocynthidis is a reliable preparation for its usual employment. The ec. tr. is too violent in action. The mother tincture is a 10% preparation of the pulp of the dried fruit freed from outer rinds and seed. I would advise the extract for its purgative effect and @ for small doses. If the ec. tr. is used at all it should be diluted with nine volumes of 76% alcohol and used as the tincture.

In large doses colocynth is a hydrogogue cathartic, very violent in action, and should not be given in the presence of feebleness or inflammation. The average dose of the extract is $\frac{1}{2}$ gr., and in this dose, or even 1 gr. doses, it is safe and often useful.

In small doses it is useful in sharp, cutting pain and cramp in the bowels. The form of colic bending one double and relieved by pressure. This sounds like homœopathy, but it is really nothing of the sort, because it is not diarrhea but temporary neuralgic pain that small doses of colocynth cures. It has the same effect in uterine neu-

ralgia of a transient nature, and also in temporary sciatica. *Enteralgia, gastralgia, neurotic pains and tenesmus is its field.* In infantile colic use \ominus , 5 mL in half-glass of water, and give a teaspoonful every fifteen minutes. For adults use somewhat larger doses, usually 1 or 2 mL , \ominus , at a dose. Colocynth cannot be classed with the usual "cramp and colic" cures. It is not a direct remedy for diarrhea, but it is a remedy giving quick relief from pain within its indications.

CONDURANGO was lauded as a cure for gastric ulcer and cancer of the stomach some years ago. Needless to say, it disappointed. It has quite a history in the camp of the homœopaths, from whom we borrowed it and returned it in a damaged condition. They say its guiding symptom is "painful crack in corner of mouth." It impresses me we have had lots of smoke for a very little fire. It is probably of some service in catarrhal gastritis, since its influence resembles hydrastis. (F.e., 15 to 60 mL .)

CONIINE. See *Cicuta Virosa* and *Conium*.

CONIUM, *Poison Hemlock*. In the absence of its characteristic odor this drug is of little value. Insist upon fresh preparations; keep well corked, and dilute only as used. The expressed juice of the plant, preserved with alcohol, is its best preparation, but is hard to get. An assayed fluidextract is reliable.

For the physiologic action in detail, read Plato's description of the death of Socrates or the text-books.

It is of value in diseases characterized by extreme activity of the motor nerves, such as paralysis agitans, chorea, hysteria, delirium tremens, laryngeal spasm, torticollis, some cases of asthma and whooping cough, and irritable laryngeal cough. It is highly useful in visceral pain and the pain of cancers,

Dose, f.e., 2 to 6 mL , but may be run up to 20 mL in cancer; ec. tr., 1 to 5 mL ; expressed juice, 1 to 5 mL . For hypodermic use, Merck's Conine Hydrobromate, 1-20 to 1-6 gr. with caution and only in severe cases.

CONVALLARIA, *Lily of the Valley*. An infusion of the whole plant is an active and satisfactory preparation. The root is more commonly employed, and should, preferably, be worked in a recent state. The solid extract is usually unsatisfactory.

Convallaria increases blood pressure and the flow of urine, has no cumulative action, and is very slightly toxic. It is of use when the ventricles are overdistended and dilatation begins in an absence of compensatory hypertrophy and in venous stasis.

Its most effective range, according to Germain-Sée, is cardiac paresis, palpitation, arhythmia, mitral constriction and insufficiency, dilatations, and cardiac dropsy.

It does not take the place of digitalis when an immediate and decided impression is demanded, but for long-continued administration it is superior, since it is not cumulative, does not interfere with digestion, and exerts its diuretic action gently except in very large doses.

Dose, infusion, from 1 to 3 tablespoonfuls, the large dose only temporarily; U. S. P. f.e., 5 to 20 mL ; green root fluidextract or ec. tr., 1 to 5 mL . Tinctures are too weak. The glucoside *Convallamarin*, 1-12 to 1 gr.

COPAIBA. A stimulant balsam with diuretic and expectorant properties. Used in gonorrhea and inflammations of urinary and respiratory tracts after subsidence of acute stage. Dose, oil, 5 to 15 mL ; resin, 5 to 15 gr.

COPPER SALTS. Copper is a great oxygen carrier and is thought to favorably influence the hemoglobin when given in minute amounts, supplying oxygen and, as Grau-

vogl said, "neutralizing an overplus of iodosmone in the blood." Thus, it is an antiseptic of great value. Apart from this, copper influences spasmotic affections and nausea and vomiting resulting reflexly from the absorption of ptomaines and organic poisons.

Precipitated metallic copper, in minute doses triturated with sugar, is sometimes used to get the uncombined action of copper, but *Cupric acetate* acts in a similar manner. The normal acetate, in doses of $\frac{1}{8}$ gr., is used in chlorosis, spasmotic diseases, as a stimulant to blood making, and in diseases of the ductless glands. Externally, it is used in gonorrhea and conjunctivitis in $\frac{1}{4}$ to 1% solution. There is a tincture made and used quite largely in Germany. It is a convenient way to use it. The dose is $\frac{1}{4}$ to 5 ml.

Arsenite of copper is a powerful poison, of use in minute doses. All three schools agree upon its indications and its dose. Its indications are diarrhea, with large and frequent discharges and accompanied by watery vomiting, colic, green and offensive stools. It is valuable in cholera infantum in frequent doses of 1-1000 gr. or 3x and increased gradually. In doses of 1-50 to 1-100 gr. or 2x it is a valuable intestinal antiseptic for adults, sometimes of value even in typhoid fever.

Sulphate of copper. Emetic, 2 to 5 gr. Nervine and alterative, $\frac{1}{4}$ gr. Externally, to eye, 1 gr. to 3, but as styptic to other tissues up to saturated solution.

CORN SILK. See *Zea*.

COTTON ROOT BARK. See *Gossypi Cortex*.

CRATAEGUS OXYACANTHA, *English Hawthorn Fruit*.

This remedy is of too recent introduction to speak positively regarding it. Very enthusiastic reports are appearing favoring it as an improvement over digitalis in the

treatment of heart disease. It is beneficial in chronic heart affections with a weak and irregular action. What more can be affirmed of it time will tell. Dose, f.e., 5 to 10 ml. If for long-continued administration, tr., 8 to 15 ml.

**"CREOLIN," "CRESOL," "LYSOL," CRUDE CARBOLIC ACID,
ETC.**

The new U. S. Pharmacopœia drops crude carbolic acid, calls purified carbolic acid "Phenol," and makes official "Cresol."

The heavy oil of coal tar, which distils over at from 325 to 375° Fahr., is the usual source of these products. *Crude carbolic acid* is a very complex substance, containing "Phenol" and three isomeric cresols, hydrocarbons, and water. For many uses as a disinfectant it is just as serviceable and is much more economical than "Cresol."

"*Cresol*" is the combination of the three isomeric cresols, and contains no phenol. It may be given internally in doses of 1 or 2 drops, well diluted. It is much more expensive than crude carbolic acid, and is to be preferred in surgical work.

"*Creolin*" is practically saponified cresol. It is described as "saponified coal-tar creosote." Its advantage consists in being in such a state as to form at once an imperfect admixture with water. One fluidounce to a gallon is its usually employed aqueous mixture. Its disadvantage is that the mixture is turbid.

"*Lysol*" is a 50% creosol product, the cresylic acid being in a free and soluble state. Its aqueous solution is clear. It is used in $\frac{1}{2}$ to 2% solution in surgery. Its disadvantage is that hands and instruments immersed in it are slippy. Bichloride solution washes the slippy coating off the hands.

All of these agents are of much greater bactericidal

power than phenol, and they are rapidly displacing it in surgery.

CREOSOTUM. "A mixture of phenols and phenol derivatives, chiefly guaiacol and cresol, obtained during the distillation of wood tar, preferably of that derived from the beech, *Fagus silvatica*." Guaiacol, creosote, and cresol are *somewhat* similar in action, and can be administered after meals in cream, cod liver oil, whisky, or in capsules.

Creosote is used in phthisis of a non-febrile character, sympathetic vomiting (in small doses), chronic bronchitis, fetid diarrhea. Locally, to carious dental pulp, and, diluted, to burns and as an antiseptic. Dose, 1 to 5 $\text{m}\ell$.

While cresol or "coal-tar creosote" can be used internally, it is so apt to contain the toxic elements in excess that the safe plan is to use only beechwood creosote. Even this sometimes contains coerulignol, and only reliable makes should be used.

CROTON OIL. See OI. Tiglii.

CUBEBĀ, *Cubeb*. Employed in the treatment of gonorrhœa after the active stage has subsided. Also used in gleet, catarrh of the bladder, and in some bronchial affections with free secretion. F.e., 15 to 60 $\text{m}\ell$; oil, 5 to 15 $\text{m}\ell$; oleoresin, 10 to 30 $\text{m}\ell$; tr., 1 to 4 f3.

CUCURBITA. There are two remedies known by this name: *Cucurbita citrullus*, or the ordinary watermelon (the seeds being employed), is quite markedly diuretic. The infusion of the seeds is a most excellent non-irritating diuretic, valuable in the diseases of children who cry during urination, and who stain the diapers a deep color. It is useful in the active stage of cystitis in adults. Give them teaspoonful doses of the fluidextract.

Cucurbita Pepo is the pumpkin. The U. S. P. desig-

nates it as "Pepo," the homœopaths as "Cucurbita." They use small doses in the vomiting of pregnancy. The seeds are used to expel the tapeworm. Scald 2 ounces of the seed and peel off the outer skin when softened. Break up the inner pulp and eat with cream in the morning after a twelve to fifteen hours' fast. Two hours later take a dose of castor oil.

CYPRIPEDIUM, *Lady's Slipper*. Nervous stimulant, anti-spasmodic, analgesic. Only preparations of the fresh root carry the *full* activity of this drug, although the fluid-extract and oleoresin are of some value.

This rather feeble agent finds its greatest field of usefulness in cerebral hyperemia and functional nervousness of infants and in mild convulsive affections due to teething or to irritation of the brain in scrofulous children. With those children who are wakeful at night and yet are not ill and want to laugh and play, it is a very satisfactory drug. It will frequently take the place of an opiate and is not apt to do any harm, but it must be remembered that it is not a remedy for pain and its influence is in functional diseases, not in organic affections.

It is of some service in the case of adults who suffer from nervousness, restlessness, and hyperesthesia induced by genito-urinary diseases, but is not to be depended upon in severe cases.

Dose, ec. tr. or f.e., 10 to 60 m for adults. The former is the more active.

DAMIANA, *Turnera aphrodisiaca*, is a native of Mexico and employed there in exactly the same manner as we use tea here, and is regarded as a pleasant, gentle stimulant without after-effects, and is not generally regarded in the light of a drug. There is no scientific evidence in favor of the claim that it possesses marked aphrodisiac prop-

erties. See the *Pharmaceutical Review*, Vol. 22, p. 126, for an exhaustive study of the plant.

DIGITALIS. A full consideration of this important drug will not be attempted here, but a few views will be presented. The action of this drug depends very much upon how it is administered. If given in the way this little book advocates the administration of many remedies, viz., in small and frequent doses, it will do more harm than good, acting in an irregular and oftentimes in a depressing manner and irritating the gastro-intestinal tract. It is in this way that the cumulative action is apt to be brought about. If larger doses are given six to ten hours apart and not too long continued, there is no more reliable remedy as a heart stimulant. Heart stimulants should not be used for every trifle, but in prostration, surgical shock, in the crisis of debilitating disease, to slow a rapid and feeble pulse in sthenic fever with high temperature, compressible pulse and vital failure, the failing heart of pneumonia, cyanosis, impending death from mitral disease, failure of heart in child-birth, these and many more serious conditions are promptly met with digitalis in free doses of the tincture or fluidextract. Do not combine with other heart stimulants or follow the dose with food or water or bulky medication. If the other heart stimulants are needed and are specifically indicated, each in its place, give the one indicated and reserve digitalis. Mixtures of three or four heart stimulants are highly irrational. F.e., 1 to 3 m; tr., 5 to 20 m. In my hands, tinctures made of the recent herb are not superior to the U. S. P. preparations.

Infusum Digitalis (U. S. P. 1½%), in doses of $\frac{1}{2}$ to 1 3, is a positive and most valuable diuretic; but do not give many doses as large as this, and keep patient in the recumbent position. The average dose of the infusion is

2 teaspoonfuls, and 1 $\frac{3}{4}$ doses should not be given initially except where urgently demanded. A poultice of digitalis leaves applied directly over the kidneys will manifest the diuretic action in a short time.

DIOSCOREA, *Wild Yam*. This antispasmodic and anodyne is usually incorporated in the formulæ of "female regulators." Its action is upon griping pain or colic in the stomach or bowels. It is especially useful in bilious colic and the pain of muscular spasm in the intestines. The pain occasioned by the passing of gall-stones is much relieved by it. Spasmodic affections of the pelvic viscera and after-pains come within its sphere of action. F.e. or ec. tr., 3 to 60 m; seldom above 20 or 30 m.

DIURETIN. An active diuretic recommended in dropsy and nephritis, especially that following scarlet fever. Dose, 15 gr. in powder or capsule, followed by water, four or five times a day.

DROSERA, *Sundew*. This is a very valuable drug, but has well-defined limitations. Only preparations of the green plant are really active. The imported German tincture, the ec. tr., and the mother tincture are reliable.

Drosera is antispasmodic, expectorant, and a respiratory sedative; highly useful in dry, irritable cough of a hoarse, resonant, and spasmodic nature. In my experience it is, generally speaking, the best agent we have in whooping cough. Spasmodic dry coughs generally are much relieved by it, and especially the cough of measles. Laryngeal phthisis is relieved somewhat by this agent. It combines nicely with other expectorant agents and with aconite and bryonia.

Dose, small and frequent doses are most useful. German tincture, 10 to 40 m; ec. tr., 1 to 5 m; @, 5 to 20 m.

DUBOISINE is used principally as a mydriatic. It is

much stronger than atropine, and is sometimes employed hypodermically in mental diseases. Dose, 1-80 to 1-30 gr. Externally, in 0.2 to 0.8% solution.

Homœopathic ophthalmologists use the 3x dilution of *Duboisia*, or corkwood tree, in the treatment of conjunctivitis, hyperemia of the retina, and for pain over the eyes. Personally, I have had no experience in its homœopathic employment, but from its resemblance to belladonna, which we know relieves capillary hyperemia in small doses, it is reasonable to expect results of a similar nature from this more active drug.

DULCAMARA, Bitter-Sweet. In large doses narcotic, producing so many disagreeable symptoms as to be almost abandoned as a narcotic drug.

Its physiologic action is quite complicated, and it is hard to work out its action in small doses. However, all schools agree in all essentials concerning it. Parke, Davis & Co. in their literature state it briefly as follows: "In large doses narcotic, but used principally as an alterative diuretic, diaphoretic, and discutient. Employed in the treatment of cutaneous eruptions, particularly of a scaly nature; also in chronic rheumatism and chronic catarrh." The homœopaths arrive at the same place by the route of subjective symptomatology. I quote a homœopathic author (William Boericke, M.D.): "Hot days and cold nights towards the close of summer are especially favorable to the action of dulcamara, and it is one of the remedies that correspond in their symptoms to the conditions found as effects of damp weather, colds after exposure to wet, especially diarrhea. It has a specific relation also to the *skin, glands, and digestive organs, mucous membranes* secreting more profusely while the skin is inactive. The *rheumatic troubles* induced by damp cold are aggravated by every cold change and somewhat relieved by moving

about. Results from sitting on cold, damp ground. Congestive headache, with neuralgia and dry nose. Patients living or working in damp, cold basements."

Now for an eclectic view of dulcamara in small doses: "Dulcamara is a remedy for all conditions resulting from suppression of secretion from exposure to cold and dampness. It will restore normal excretion and secretion. It is an excellent alterative if administered with care."

This drug is one of very many instances in which I could quote three harmonious views expressed in a different manner according to the school point of view. Any one studying *materia medica* in this way will soon discover little reason for a divided profession.

In small dose therapy, dulcamara is given in doses of f.e., 2 to 20 m; ec. tr. (very active), $\frac{1}{2}$ to 5 m; for children, 0, 1 or 2 m. The smaller doses are well to begin with, and may be carefully increased.

DUOTOL. See Guaiacolis Carbonas under Guaiacol.

ECHINACEA, *Purple Cone Flower*. This remarkable drug is rapidly coming into prominence. Several firms make excellent fluidextracts, but by far the best preparation is a purified, decolorized, and assayed fluidextract given the trade name of *Echafolta*. Its uses and doses are the same as the f.e. or ec. tr., but it is suitable for surgical purposes while they are not.

Echinacea mildly irritates the terminal nerve endings, causes a feeling of constriction of the throat, promotes the flow of saliva, is diaphoretic and diuretic, stimulates the glandular organs, actively stimulates secretion and excretion, retrograde tissue metabolism, the lymphatic system, and the hematogenic processes. Thus, this agent actively opposes septic tendencies and blood poisoning. It does not appear to possess active toxic properties, but is somewhat sedative to the nervous system in large doses.

This agent is used by all three schools in exactly the same doses and indications. The present author has used it largely, and esteems it most highly. It corrects blood depravation (so far as a drug can) when due to auto-infection of an acute type, progressive blood taints due to non-elimination or the slow development of toxins, tendencies to sepsis or non-traumatic gangrene, foul discharges and depraved states of the secretions, and morbid puerperal discharges. Secondarily, it opposes sepsis or zymosis from without. Naturally, this action is less marked and cannot be exercised quickly enough to be of any material advantage in most instances. It has long been the dream of therapeutists to get an antiseptic into the blood that would kill bacteria and not kill the patient. In introducing echinacea the most effective step in this direction thus far has been taken, and I have hopes that its principles will be isolated and be made suitable for hypodermic injection as we employ diphtheria antitoxin.

As an intestinal antiseptic, echinacea takes first rank, and I firmly believe it to be of the most positive use in the initial stages of typhoid fever. In the eclectic wards of Cook County Hospital, Chicago, it has been carefully studied in this connection, and is much relied upon. In puerperal sepsis, next to mechanical or surgical measures, it is undoubtedly the most generally praised remedy we have. I cannot speak from personal experience in that matter. I can speak highly of it in septic laryngeal and throat affections, and, after antitoxin, uniformly employ it in diphtheria. In this disease it seems to be of most use in the after-stages, or at least its influence is not much manifest until then. Cases recover more quickly than when antitoxin alone is used. Subacute uremic poisoning, recurrent appendicitis with a mild septic but not necrotic

element, erysipelas and cholera infantum all appear to be benefited by it. It has been highly recommended in syphilis. Personally, I use it *after* a course of mercury, but the eclectics claim to cure syphilis without mercury. They rely upon echinacea, stillingia, iris, kalmia, and iodides, and do not use mercury unless the case fails to prosper. On the other hand, the homoeopaths use more salts of mercury and for more varied conditions than we do. So there you are. My advice would be to use it and afterwards depend upon echinacea, iodides, and stillingia, but do not give iodides and echinacea at the same time unless the iodides are given in small doses.

Poisonous venoms from snakes, rabid animals, tarantulas, and insects are effectively treated by echinacea and stimulants. Locally applied, echinacea is of use in boils and septic conditions, old ulcers, bed sores, carbuncles, and syphilitic skin lesions.

Dose, "echafolta," or f.e. echinacea, 5 to 30 ml. Usually 5 to 8 ml every hour in acute, or every three hours in chronic, cases. Initial dose may be 1 teaspoonful. For surgical uses, "echafolta," 1 fl. oz. to water, 1 pint. In severe cases and in dentistry twice this proportion. Do not expect echinacea to displace the curette or to cure appendicitis.

ELATERINUM, Elaterium. *In large doses*, a hydrogogue cathartic and diuretic, but is of variable activity. It may be cautiously employed in dropsy or as a depleting agent. The average dose of the U. S. P. Elaterin is 1-10 gr. Merck's crystalline elaterin is a much more definite agent, and is to be preferred. Its dose is 1-20 to 1-10 gr. The maximum dose of ec. tr. is 15 ml.

In small doses it has some reputation in the treatment of cystitis and inflammations of the neck of the bladder. For this purpose doses of 1-3 to 1 ml of ec. tr. will serve

nicely. It is deserving of trial in this connection, but more direct methods with larger doses of drugs, such as triticum or corn silk, have acted better in my hands. Sometimes small doses will control violent vomiting and purging, but it should not be depended upon.

ELECAMPANE. See Inula Helenium.

EPIGAEA, *Trailing Arbutus*. The action is similar to *uva ursi*; chronic cystitis, dysuria, vesicæ tenesmus, conditions due to uric acid and accompanied with mucus, are benefited by this agent. F.e., 30 to 60 m; ec. tr., 10 to 30 m. An infusion of the leaves is very prompt and satisfactory in action.

ERGOT, *Spurred Rye*. The chemists have never agreed regarding the constituents of ergot. Dr. Edward R. Squibb has done more than any other man to perfect an ergot product for therapeutic use. The fluidextract contains a trace of acetic acid, which supposedly fixes the trimethylamine of ergot. The solid extract is a thoroughly reliable preparation also. "Ergotin" is a purified fluidextract adapted to hypodermic use, but rather thick for such use. It is very active. The sp. m. is quite alcoholic and not adapted to hypodermic use. It is free of acetic acid and ergot fat. It mixes clearly with water, and is suitable for the action in both large and small doses but must not be combined with alkalies. "Lloyd's Ergot" is especially adapted to hypodermic use, as it contains no fat, alcohol, and inorganic salts. Its menstruum is glycerine and water, and it contains 0.20% of phenol. Parke, Davis & Co. put up ergot in hermetically sealed glass bulbs for hypodermic use. *Boujean's Ergotin* is practically the same as the German Pharmacopœia extract.

Ergot is used too much in obstetrics and too little for its other indications. It is only necessary to say that

ergot causes contraction of unstriped muscular tissues in all parts of the body to open up for it a wide field in therapeutics. Look up in your works upon histology how widely this tissue is distributed in the body, and you will appreciate ergot. Briefly, it is found in the hollow viscera and the blood-vessels. Hemorrhage of a non-traumatic nature from mucous membranes is best treated with a few full doses, or 1 f3 "Lloyd's Ergot" hypodermically in extreme cases. In cerebral apoplexy give such doses at frequent intervals until the full physiologic action of use in the case is reached. Do not temporize with apoplexy, even of mild type. If you use "Ergotin," it is best to dilute it a little with glycerine and water before injecting. For the relief of shock, ergot is most valuable. Shock is a vaso-motor paralysis with relaxation of the sphincters and non-striated tissues generally. Give in somewhat less dose than in apoplexy, but give it hypodermically. A dose just before general anesthesia reduces the danger of shock. It is a good thing to give ergot before a laparotomy, as the bowels move better afterwards, due to the stimulated peristalsis. Heat prostration responds well to large doses of ergot, since there is vascular relaxation.

Dr. A. B. Conklin gives the indications for ergot in cases of shock and collapse, as follows: "A pale, cool, relaxed skin, bathed in cold, clammy perspiration, the mucous secretions being likewise increased, with involuntary passages from the bowels and bladder. The pulse is soft and easily compressed, rapid, feeble, and possibly intermittent. The heart's action is increased in frequency, but lacking in force, and well expressed by the word fluttering. Its cavities are not filled, and the heart lacks blood on which to act, instead of being itself weak. The vessels must be made to return to their normal caliber, thus restoring blood pressure."

Thus we can see the value of ergot in collapse from severe diseases in an algid, congestive, or paralytic stage. Delirium tremens and the induced mania is conquered more quickly by ergot than by narcotics. Insomnia from cerebral hyperemia, salivation from mercury, the diarrhea of fright, meningitis, congestion of the brain, miliary aneurisms, and other diseases in which the circulation is at fault in the way ergot corrects are all directly benefited by its use. Very often it is well to alternate it with small doses of belladonna.

The walls of hollow viscera and the sphincters being amenable to the action of ergot, it is oftentimes indicated in pulmonary vesicular emphysema, relaxed laryngitis, lack of intestinal peristalsis, incontinence of urine, enlarged spleen, relaxed pelvic viscera, and rectal tissues, relaxed scrotum, spermatorrhea, and other relaxed states of organs.

In obstetric practice it arrests hemorrhage after delivery. Works upon obstetrics should be consulted for the detailed indications in that sphere of work.

Ergot is contraindicated where tonicity of non-striated tissues exists, in high blood pressure, or when endocarditis exists, or degenerative changes have occurred in the heart or vessels. Spinal anemia, or cerebral or spinal neurotic states, contraindicate ergot. Large doses too long continued are apt to cause retention of urine. Spasmodic affections are aggravated by ergot. Dose: F. E., ec. tr., or Lloyd's Ergot, 20 mL to 2 f3; ext., 5 to 10 gr.; Boujean's, 1 to 5 gr.; Yvon's Ergotin (fluid), 5 to 15 mL ; "Ergotole," 5 to 20 mL . Small doses of ergot are seldom effective.

ERIGERON, Fleabane. This is a very valuable agent in passive hemorrhages without fever. It is especially applicable in uterine hemorrhage, and has, in lesser degree than ergot, an action upon unstriped muscular tissues.

As a local application, it acts somewhat like turpentine, but is less irritating.

Its application is in uterine, vesical, and intestinal hemorrhage, chronic diarrhea, gonorrhea, leucorrhea, bronchitis, phthisis, tympanites, and irritation from vesical calculi.

Dose, oil of erigeron, 5 to 10 ℥ upon sugar; ec. tr., 5 to 30 ℥.

ERIODICTYON. See Yerba Santa.

ESERINE, *Physostigmine*. This substance and its sulphate are used to restore normal optic conditions after the induction of mydriasis. One grain to the ounce of distilled water, dropping 1 ℥ three or four times a day into the eye. Internally, 1-150 to 1-30 gr. very cautiously. See *Physostigma*.

ETHER. Anesthetic. Rarely used internally, but is sedative or stimulant according to dose. It is used in nausea from gastric depression, colic, angina pectoris, spasmodic asthma, and neuralgia of stomach or bowels—10 to 60 ℥.

ETHYL. *Acetate* or *acetic ether* is a stimulating antispasmodic, while irritating yet positive in its control of convulsions in children. Give them 5 to 10 ℥ in water every half hour or hour as needed until controlled. *Bromide* (not bromide of ethylene) is a general anesthetic, very depressing upon respiration, but is suitable for transient anesthesia in minor surgery and dentistry. It is imperative that it be absolutely pure. *Chloride*, put up in tubes and spray therefrom, used as local anesthetic and to freeze parts. Hold tube six to ten inches from parts. *Highly inflammable*. *Iodide*, an antispasmodic suggested in several states, but of too unstable a chemical nature and too disagreeable in use to be recommended.

EUCAINE (A. and B.). Both substances are closely related. Eucaine is a local anesthetic somewhat slower in action and slightly less toxic in action than cocaine. Used in 2, 4, and 10% solutions.

EUCALYPTUS, *Blue gum tree*. The preparations of this valuable drug are many, but *Eucalyptol* is probably the most definite and generally useful. Tinctures and fluid-extracts depend in value upon how recent a leaf is used in making them up, since the eucalyptol soon evaporates from the dried leaves. The antimalarial influence of the drug seems to be better represented in a good fluidextract, and the antiseptic properties in eucalyptol.

Eucalyptus is antimalarial, antiperiodic, febrifuge, and tonic, producing great increase of urea and possessing antiseptic properties.

In large doses (f.e. or ec. tr., 20 to 30 ml) it is antimalarial, rather slow in action, but peculiarly well adapted to cases where quinine irritates the nervous system, and to masked intermittents and so-called "dumb ague." Malaria neuralgia and ague with jaundice yield nicely to its persistent use. In low forms of fever, such as typhoid or scarlet fevers, its antiseptic and tonic properties are often of very distinct value, and it serves to keep the kidneys active.

In small doses (f.e. or ec. tr., 3 to 10 ml) it appears to be eliminated by the skin to just sufficient degree to stimulate it, producing a feeling of warmth, while very large doses are known to cause vaso-constriction, which makes a cold surface. The secreting mucous membranes of the respiratory and gastro-intestinal system are affected similarly. Hence, this agent is useful in a cold and clammy skin and a heavy, inert sensation in the viscera. It should be combined with other indicated agents to remove the underlying cause of these subjective symptoms.

Eucalyptol is a very valuable antiseptic as well as possessing, in almost full measure, the virtues of eucalyptus. A few drops upon the surface of hot water is, next to calomel, the best inhalation to loosen diphtheritic membrane. At the same time give eucalyptus and jaborandi internally. As a gargle, spray, or inhalation (properly diluted), it is of value in bronchial catarrh, asthma, phthisis, etc. In chronic ulceration of the stomach and in septic, renal, and vesical troubles, as well as in most of the indications for eucalyptus, it is of value. Dose, 5 to 15 m^l in capsules or on sugar. Locally, it can be used combined with oils.

EUONYMUS, Wahoo. This drug is said to be the most direct of cholagogues. *In very large doses* it is a drastic cathartic. *In moderate doses* (f.e., 20 to 30 m^l; ec. tr., 5 to 15 m^l; or *Euonymin*, $\frac{1}{4}$ to $\frac{1}{2}$ gr.) it is a valuable hepatic stimulant, especially adapted to bilious malarial conditions. It markedly improves digestion, and is tonic in action. The homœopaths esteem the ix trituration tablets (1-10 gr.) of euonymin in the treatment of albuminuria.

EUPATORIUM, Boneset. *In very large doses* is emetic. *Moderate doses* of the hot infusion are diaphoretic and valuable in colds, especially where the patient is sore and aches in the back and limbs. Masked intermittent fever is promptly benefited by it. If the herb is not at hand, add 10 or 12 m^l of ec. tr. to a cup of boiling water, and an excellent "tea" is the result.

In small doses it acts upon the gastro-hepatic organs and bronchial mucous membranes, and is valuable in indigestion, soreness in the chest, influenza, and *catarrhal* troubles generally. (F.e. or ec. tr., 5 to 15 m^l.) If used as a "tea" the ec. tr., being more aromatic and less bitter

than the fluidextract, is to be preferred. If boneset were a rare and expensive drug it would be highly esteemed. It is really very valuable within its proper field.

EUPHORBIA. Several of the Euphorbiaceæ are employed in medicine. *E. Corollata* is employed in small doses (f.e., 1 to 5 m) in atonic dyspepsia. *E. Dathyris* is employed by the homœopaths for a host of conditions for which I can see no definite reason. *In large doses* it is a drastic purgative. *E. Heterodoxa* is a violent irritant. Its juice preserved with salicylic acid is the "secret cancer cure" employed by those who use "a purely vegetable preparation." There are authentic instances recorded in which it has succeeded. *E. Pilulifera* has long been employed by the homœopaths in humid asthma and hay fever, and has been introduced into regular medicine, but the dose usually employed (f.e., 30 to 60 m) is altogether too large. Use 5 to 15 m and it is fairly useful, although *Sticta pulmonaria* (q. v.) is much better. *E. Resinifera* is used in drop doses of the tincture in vesicular erysipelas and in the pains of cancer when not severe. It is toxic in large doses.

EUPION is a distillation from wood tar, employed in low dilution by the homœopaths for chronic uterine diseases resulting in displacements. One hears so much of the practitioners of this school claiming to cure uterine displacements with internal medicines, but this is the basis of it. Probably it would act like small doses of turpentine. They use *Abies canadensis*, which is a terebinthinate, in the same connection.

EXALGIN. A synthetic analgesic to be given to children with great care, but they tolerate small doses very well. The agent is of value in chorea of recent character and in pain of a nervous character. Adult dose, 4 gr.; maximum, 8 gr.

FERRUM, *Ferri Arsenas*, is administered in certain diseases of the skin with anemia, notably in dry eczema and impetigo. In pill form, 1-16 to $\frac{1}{8}$ gr. *Ferrous bromide* is used in scrofula and swollen glands in doses of 10 to 40 m_l of the syrup. *Ferri carbonas saccharatus* of the U. S. P. is a valuable preparation possessing great restorative powers. It is non-irritating, nearly tasteless, and not astringent. Persons who object to a pill can take powders of this preparation in place of Blaud's pill. It is a form of iron of peculiar value in anemic young people with pustular conditions of the face with acne, and in atonic conditions of the stomach, combined with hydрастine and capsicum. Dose, 2 to 6 gr. *Ferri chloridum*, employed in U. S. P. tincture, in restoring red blood corpuscles, in anemia, chlorosis, in chronic inflammation of the kidneys and albuminuria, and in acute erysipelas and diphtheria in cases in which the mucous membranes are red and the tongue not heavily furred. Average dose of tincture, 8 m_l. *Ferri citras*, tonic, astringent, hematinic. Dose, 3 to 10 gr. *Ferri et ammonii citras* is a good form of iron to dispense in solution. Both the citrate and ammonia citrate combine nicely with other drugs in solution and do not injure the teeth. Do not give when there is gastric irritation. The dose of both salts is the same, 3 to 10 gr. *Ferri et ammonii sulphas* requires larger dosage, 5 to 15 gr. *Ferri et ammonii tartras* and the corresponding potash salt act much as do the citrates, but may be given in larger doses. They are well adapted to children, and make up nicely in solution. *Ferri et quininæ citras* and the *Ferri et strychninæ citras* are valuable salts, but are too disagreeable to dispense in extempore prescriptions. The *Elixir Ferri, Quininæ et strychninæ phosphatum*, is to be recommended when these ferruginous elements are desired. There is no better general

tonic, none of the expensive proprietary iron tonics being nearly so efficient. *Ferri hydroxidum cum magnesii oxido* is the official arsenic antidote of the U. S. P. Dose, 2 to 8 fʒ. *Ferri hypophosphis* is used in an average dose of 3 gr. *Ferri iodidi*, tonic, alterative, U. S. P. syrup. Dose, 5 to 30 ml. *Ferri phosphas solubilis* is of great value in debility following exhausting diseases. The average dose is 4 gr. *Ferri sulphas*, a tonic and restorative, and, in atonic conditions, an emmenagogue. Average dose, 3 gr. *Ferrum reductum* is one of our best iron tonics and of great value in the diseases of children. Dose, 1 to 3 gr.

The many and important questions involved in the therapeutics of iron do not properly come within the province of a book such as this. Any possible point of view may be taken, yet, after all, iron enters into the system largely by its incorporation with hemoglobin, and the way in which it may be best administered is a mere matter of detail. Manufacturers of proprietary and so-called "organic iron" preparations to the contrary notwithstanding, we do not yet know just how iron reaches the hemoglobin nor just how it is taken up by it. Hemoglobin may be regarded as a mere organic iron compound, if you please. Personally, I do not believe the matter is one-half so simple as that. It is probable we are giving iron empirically. In a state of nature our food would contain all we needed of it, and that would perhaps be empiricism, too. Be that as it may, we have had altogether too much ultra-scientific pseudo-science about iron, and I am content to give it for much the same reason that I would place a little clean clay in the feeding trough of my horse now and then when I cannot turn him out to grass. Aside from the cravings of the tissues for iron as a food, its value in disease is too well known to require comment. The U. S. P. recognizes so many avail-

able forms of iron that we know are active and satisfactory that there is no occasion to employ the proprietaries. Some of them really contain very little iron, and others an unnecessary amount of wine.

In small doses iron does not impress the system differently from large doses. It is simply a question of degree. The tendency is to give smaller doses than were formerly used. A careful study of sectarian literature upon iron has revealed little of value. An analysis of the "provings" of iron shows little but what we have long known along with much irrelevant and doubtful matter. They use one salt of iron we do not employ, the picrate, claiming that the second trituration cures senile hypertrophy of the prostate. That is a fairly reasonable proposition. The sectarians use most iron salts in actual practice just about as we do, and their pharmaceuticals are most excellent preparations of iron.

FORMALDEHYDE. This pungent gas can be produced by passing the vapor of wood alcohol over coarsely powdered platinum heated to redness. Various forms of generators and formaldehyde candles are in trade, and many of them are highly efficient. "*Formalin*" (pure medicinal) is a 35% aqueous solution formaldehyde. It is a non-corrosive antiseptic used in surgery in $\frac{1}{4}$ to $\frac{1}{2}\%$ solution usually, and up to 2%. As a vapor or spray, 1 to 2%; for collyria, 1-20% solution. "*Cystogen*" is an ammonia formaldehyde salt, valuable internally to prevent the decomposition of urine in the bladder. It prevents or arrests the growth of pyogenic bacteria in the urine. Dose, 5 to 7 gr., two to four times a day, dissolved in hot water. "*Formin*," "*Aminoform*," and "*Urotropin*" are practically the same thing. The U. S. P. has an official title for it —*Hexamethylenamina*, and the average dose is given as 4 gr. All these preparations are the same thing practi-

cally, and liberate formaldehyde by their decomposition in the body.

FUCUS VESICULOSIS, *Bladder Wrack*. This is a seaweed, active because of its contained iodine. It is used as an alterative and to reduce unhealthy fat in adipose persons, and in goitre. Dose, f.e., $\frac{1}{2}$ to 4 gr.; solid extract, 5 to 30 gr. In Japan many species of seaweed are used regularly as food. The Eskimo and other maritime peoples use it. It has been noted that these people are markedly free of glandular troubles and tuberculosis.

GAMBIR, *Pale Catechu*. This substance is now official, displacing *Acacia catechu*, formerly in use. The new compound tincture is given in teaspoonful doses. It contains, besides gambir, cinnamon and spirit, and is a grateful astringent carminative. The British Pharmacopœia rejected catechu and substituted gambir some years ago; and our change is a wise one, since catechu is not so sweet as is gambir, and contains substances more apt to produce spontaneous gelatinization.

GAMBOGE is a harsh and very toxic hydragogue cathartic, very wisely rarely prescribed except in small quantities to intensify the action of milder agents. The dose used to be given at 1 to 4 gr., but is now rated at $\frac{1}{8}$ to $\frac{1}{4}$ gr. in such combination. It thus enters into many formulæ.

GAULTHERIA, *Wintergreen*. The oil is the most useful preparation, and contains about 90% of methyl-salicylic acid. Its dose is 5 to 10 ml. Salicylic acid prepared from true (not synthetic) oil of wintergreen is far safer and more efficient than the ordinary acid. The various tinctures of gaultheria are eligible ways for its administration in small doses for various forms of neuralgia,

gonorrhreal rheumatism, inflammation of the bladder, and hepatic congestion. Dose, ec. tr., 5 to 15 ml; tr., 30 to 120 ml. Do not mix with aqueous menstrua until moment of administration.

GELSEMIUM. This official drug comes into prominence through the efforts of the eclectics, who have always maintained that the recent root should be employed in making extracts and tinctures. They probably overstate the matter, but the present author has made almost daily use of gelsemium for sixteen years (it being a favorite drug with me), and I am satisfied that green root fluid-extracts of gelsemium give *better* results, if not more marked physiologic reactions, than does the U. S. P. preparation. There is a peculiar honey-like odor to green gelsemium largely dissipated by drying. The alkaloids extracted from gelsemium do not represent the therapeutic values of the drug itself, but possess a certain usefulness. Merck's *Gelseminine* is an antispasmodic and antineurinalgic used in doses of 1-120 to 1-30 gr. An initial dose of 1-10 gr., followed by smaller ones, is a good physiologic antidote for strychnia poisoning. The U. S. P. f.e. and tr. are very representative preparations of the dried, and the ec. tr. and @ of the green gelsemium.

Gelsemium directs its action principally to the central nervous system. By inhibiting nerve action it tends to diminish the blood supply to the brain and cord. It inhibits excessive nerve action, relieving irritation in sthenic conditions, but doing harm in asthenic states.

The indication for gelsemium is acute cerebral hyperemia manifested by a flushed face, bright eyes, contracted pupils, and increased heat of the head.

In the acute fevers of infants and children this agent is very generally indicated, and is most prompt and yet safe in its effects. Aconite could with great advantage

be displaced by gelsemium in many of these cases. If there is a spasmotic tendency manifested, pretty good doses can be given to a babe. Gelsemium is, like aconite, useful in the early stage of acute inflammation, but more particularly when there is hyperemia of the brain or cord. Never give it in asthenic congestions. With adults the early stages of cerebral, spinal, or meningeal inflammations usually call for gelsemium, and it should be used in place of the bromides in a great many such states. Nervous wakefulness or nervous headache are often relieved by it at once. The surgeon finds it useful in the nervous excitation incident to peritonitis, salpingitis, and puerperal fever. Acute colds, some spasmotic coughs, acute nephritis from colds as well as post-diphtheritic or post-scarlatinal nephritis, spasmotic pain in the genito-urinary tract, and spasmotic urethral stricture, the first stages of gonorrhea, spasmotic ovarian neuralgia, uterine colic, a rigid os uteri in labor, excessive after-pains, hysteria, initial stages of tetanus, chorea, facial neuralgia, torticollis, rheumatic fever, the irritable heart of hysteria, and many other conditions call for gelsemium as a part at least of the indicated medication.

Dose, adults, f.e., $\frac{1}{2}$ to 5 m; tr., 5 to 30 m; ec. tr., $\frac{1}{2}$ to 5 m; Θ , 3 to 20 m. Maximum single dose, f.e. or ec. tr., 10 m.

In small doses. The therapeutics of this drug being so sharply defined by its rather circumscribed physiologic action, we have not attempted to separate the consideration into two groups of diseases since the actions of large and small doses differ only in degree. It is proper to state that successful homœopaths use it in the first dilution for its physiologic indications and in higher dilution for its homœopathic indications, viz., "prostration, loss of muscular power, drowsiness, lassitude, dullness, and vertigo."

GENTIANÆ, *Gentian*, is probably the most reliable simple bitter; possessing valuable tonic properties, it stimulates appetite and digestion and relieves atonic conditions unattended with pyrexia. F.e., 5 to 30 ℥; compound tincture, 30 ℥ to 2 3. The citro-chloride and the pyrophosphate of iron are frequently combined with it in the form of an elixir or a syrup.

GERANIUM, *Crane's bill*. This is a valuable drug, but its preparations are unsatisfactory. In domestic practice the fresh root is boiled in milk, and in this form is moderately satisfactory. Few fluidextracts of this root are made from sufficiently recent material; the eclectic tincture is active, but is very liable to disintegration. The solid extract in 6 to 8 gr. doses or 1 gr. pills of geranin is fairly effective.

Geranium is actively astringent, employed in gastro-enteric troubles with excessive mucous discharges and in throat difficulties as a gargle. It does not cause dryness of the mucous surfaces, and has no unpleasant influences. Besides the ordinary use in diarrhea and as an astringent, the eclectics esteem it in night sweats of tuberculosis, while the homœopaths employ 30 ℥ doses of the mother tincture in gastric ulcer, claiming that it will destroy the pyogenic membrane. It is an excellent remedy in tubercular hematuria. In general, it may be said that this agent is unduly neglected, and even though its preparations are not ideal they are useful. F.e., 10 to 60 ℥; ec. tr., 3 to 30 ℥; ℥, 10 to 60 ℥. Green root, f.e., 3 to 30 ℥. It is difficult to make a full strength fluidextract of geranium.

GLANDULÆ SUPRARENALÆ SICCÆ. Average dose, 4 gr. See Adrenalin.

GLANDULÆ THYROIDÆ SICCÆ, used in myxedema,

psoriasis, goitre, obesity, mammary tumor, uterine fibroid, and in cretinism. Average dose, 4 gr. Watch the pulse when giving large doses. The homœopaths employ this agent as above and also (in 3x attenuation) for tachycardia, palpitation, and in amblyopia.

GINSENG. Two varieties of *Panax*, or ginseng, are employed. They are mild tonics of some little use in nervous and digestive disorders.

GLONOIN. See nitroglycerine.

GNAPHALIUM, *Cud Weed*. This is a remedy valued by some physicians in cases of sciatica associated with numbness of the parts involved. Give ② in small doses.

GOLD. In ancient medical practice gold was used in scrofulous, and, somewhat more recently, in syphilitic diseases. Modern practitioners have held that it is of especial value in syphilis in subjects of a scrofulous constitution. It is employed in secondary syphilis or to take the place of mercury. The 2x and 3x triturations of *Aurum metallicum* are convenient and effective.

Aurum arsenicum, in 3x trituration, is useful in syphilitic headaches, is said to increase appetite, and to benefit chlorosis.

Auric chloride is alterative and antitubercular and useful in sclerotic and exudative nerve degenerations. Used in 1-50 gr. doses, and by the homœopaths in 2x trituration.

Aurum and sodium chloride is alterative and nervine and of much value in doses of 1-24 to 1-6 gr., in nervous exhaustion, the early stages of Bright's disease, dipsomania, syphilis, and chronic diarrhea. It is quite toxic, and small doses are to be preferred. The homœopaths call it *Aurum muriaticum natronatum*, and use 2x and

3x triturations in much the same indications, but also in ovarian and uterine lesions of a chronic nature.

Aurum iodide, in 1-60 to 1-12 gr. doses, is a useful alterative in scrofula. The 3x and 4x triturations are employed in arterio-sclerosis and senile paresis.

Aurum sulphuratum is used in 3x for paralysis agitans.

In general, it can be said that gold and its salts are of decided value. When we consider that gold is similar to mercury in its alterative effects and combines with this nerve tonic and general restorative influences, its value can be well understood. The homœopaths have gone more into its detailed study than has the regular school, and I know they have obtained highly satisfactory results with it in practice.

GOLDEN SEAL. See *Hydrastis*.

GOSSYPII CORTEX, Cotton Root Bark. This is a powerful emmenagogue and abortifacient in large doses. In smaller doses it is of value to control hemorrhages of uterine fibroids and incipient cancer.

Most of the fluidextract of cotton root bark upon the market is nearly inert. Only the fresh or very recent bark is active. In consequence, the green fluidextract or ec. tr. should be used in doses of from 5 to 20 ml.

GRANATUM, Pomegranate Bark. Employed as a vermifuge for the expulsion of tapeworm. Macerate 2 ounces of the bark in a quart of water for one day and night, and then boil down to 1 pint. After a day's fast the patient can take this in four portions an hour apart. Follow with a laxative if necessary. *Pelletierine*, as derived from pomegranate, is effective in doses of from 1-5 to $\frac{1}{2}$ gr., and the tannate of pelletierine, 5 to 15 gr., for an adult. Some authorities claim 5 gr. doses to be sufficient.

In small doses of the tincture or fluidextract this agent has been recommended in salivation. The mouth and throat may also be gargled with a decoction of the bark. It tends much to the comfort of the patient even if it does fail to cure.

GRAPHITES, Black Lead. This is a homœopathic remedy much derided by others. We will try herein to be at least fair to it. Graphite is a crystalline form of carbon with an unctuous quality due to some substance not well defined. The present author has handled many grades of it in large quantity, and believes there is some peculiar hydrocarbon combined in it. At all events, long handling of it and ingestion of its dust produces ugly eczemas and cracked or fissured sores that exude a sticky or glutinous fluid with considerable gastro-intestinal disturbance.

The powdered graphite in 10 gr. doses has been given as an "anti-psoric," but the crystals are insoluble, and if it really possesses medicinal virtues it is probably not due to the carbon itself but to the substance taking the place of the water of crystallization, and it would require the disintegration of the crystals to free this substance and render it capable of absorption into the system. I know very well from disagreeable experience that there is an irritant in some graphite, and have no doubt that a trituration containing an appreciable amount of it would exert some influence not to be derived from pure carbon. On the other hand, I really cannot see what "high potencies" of this agent could do. Alcohol seems to extract the medicinal element of long triturated graphite, and one can taste and see the color of graphite in 3x trituration. Personally, I believe it to be an alterative that influences markedly the secreting surfaces rather than the deeper tissues. In the absence of sufficient ex-

perience or definite data concerning its therapy, I will have to be content with what its sectarian advocates say of it and give its "indications" in brief for what they are worth, and would suggest that 1x or 2x triturations will do whatever graphite can do.

"Patients inclined to an unhealthy obesity and a condition of the epidermis *inclined to crack and fissure* with an eruption that exudes a honey-like fluid; patient is inclined to be sad, irritable, melancholy; *moist eczema on the face*; erysipelas, burning and stinging; *eczema capitis which forms massive dirty crusts*, matting the hair together; *unhealthy skin, every injury suppurates*, and the skin oozes a *watery, transparent, sticky fluid*; *leucorrhea in gushes* day and night; *crippled nails*; old sores break open; skin dry and inclined to crack. The remedy is especially indicated in females with a tendency to unhealthy corpulence, with deformed nails, menstrual troubles, and a characteristic exudation of the skin." (Wm. Steinrauff, M.D., "Materia Medica.")

Locally, cerates of graphite have been employed from Hippocrates down to to-day. It is useful in fissured sores and sore nipples.

GRINDELIA, Gum Plant or Rosin Weed. This agent is toxic in overdoses, producing a paresis of the pneumogastric. It is similarly used by all schools. It is indicated in asthmatic breathing and Cheyne-Stokes respiration, chronic spasmodic bronchial coughs, irregular heart action in chronic cough, and to relieve some of the symptoms of hay fever and whooping cough.

Locally applied, it has some reputation in poisoning by rhus toxicodendron, although alcohol and lead acetate are displacing it for this purpose.

Dose, f.e., 30 to 60 m; ec. tr., 2 to 15 m; solid extract, 5 to 15 gr.

GUAIACOL acts in a similar manner to creosote, but is more readily tolerated by the stomach. Dose, 2 ml gradually increased to 15 ml, in pills, or in 1 or 2% solution in brandy, wine, or other vehicle, after meals. *Guaiacolis carbonas* (Duotol) is given in doses of 4 to 8 gr. in powder and gradually increased to 15 or 20 gr. Maximum dose, 90 gr. in twenty-four hours.

GUARANA. This is the Brazilian cocoa. The natives, who roast and grind the seeds and make a beverage of them, much value this sort of chocolate as a tonic and mild nerve stimulant. It contains considerable caffeine and volatile oil, and possesses a tonic and restorative effect in the gastro-intestinal disorders, inclining toward chronic diarrhea. The fluidextract is successfully used in sick headache in doses of 10 to 30 ml. In a great many cases in which the official fluidextractum cocæ is used, guarana would give just as good results without the danger of implanting a drug habit. The average dose of the U. S. P. f.e. coca contains 1-7 gr. of coca alkaloids.

HÆMATOXYLON, *Logwood*. A tonic astringent used in 10 to 20 gr. doses of the extract in dysentery and relaxed intestinal conditions. It has been claimed, but it is not substantiated, that small doses of this agent relieve the sense of constriction incident to angina pectoris.

HAMAMELIS, *Witch Hazel*. A valuable astringent and antiseptic. The fluidextract of the leaves is probably its most available form for internal administration. The average dose is 30 ml, but 5 to 10 ml is quite sufficient if for continued administration. The *Aqua Hamamelidis* is given in teaspoonful doses. The ec. tr. and distilled extract are similar. Wood alcohol is used in the making up of some cheap extracts and is to be strictly avoided.

Therapeutically, it is indicated in bleeding from small

vessels where their walls are at fault, and especially in case of slow inflammatory changes in venous tissues and in varicosities, purpura, phlegmonous ulcerations, oozing hemorrhages, and relaxed venous states generally.

In sore throat with dark-colored membranes, spongy gums, catarrh with slight hemorrhage, hemorrhoids with bleeding and soreness, too frequent menstruation with soreness in abdomen, and in muscular soreness with a bruised feeling this agent is indicated.

Externally, the distilled extract is used in a host of minor affections, and is peculiarly effective when applied to the rectal tissues, the vaginal walls, sore breasts, and superficial burns. Applied hot, it is of marked utility in the local and pelvic soreness following a hard confinement. Ten grains of menthol to 4 fluidounces of distilled extract witch hazel is recommended by Ellingwood as an application to relieve the pain of burns. The rectal suppositories of witch hazel and buckeye have a large range of usefulness.

This agent is much valued by homœopathic physicians, who insist that it acts best in most cases by using it externally and internally at the same time, giving 10 m doses of the tincture and applying the distilled extract in 25% solution or the tincture in full strength. Some of the older homœopaths still employ it in dilutions or "potencies."

HELLEBORUS NIGER, *Snow Rose* or *Christmas Rose*. This is a toxic agent, in large doses producing drastic, hydrogogue catharsis, sensorial depression, convulsions, weak heart, and muscular weakness. Very large doses are fatal. It has been considerably used in proprietary pills advocated for dropsy. The older eclectics used it combined with bryonia, in hydrothorax, but if so used it should be carefully watched.

In small doses (ec. tr., $\frac{1}{4}$ to 1 m at frequent intervals) it is advocated by the eclectics in mental states in which the abdominal organs are seriously at fault and are a causative factor. The homœopaths make a very rational use of it in the state of effusion of hydrocephalus (1x to 3x), and small doses @ in mania of a melancholy type. In these doses it is a stimulant to all the glands of the gastro-intestinal tract. In adults, the lower dilutions (1x or 2x) probably have some effect in mental troubles associated with low states of vitality, but these effects are not very marked. With children, however, these small doses often serve a useful purpose, especially when they have disturbed sleep in the course of disease, screaming without awaking, boring the head into the pillow, and irregular respiration. It seems to equalize the circulation in the brain in these conditions. If there is fever or a flushed face give the little one small doses of gelsemium in alternation with helleborus.

Be very careful in giving large medicinal doses if given at all, as they are apt to suddenly depress the heart.

HELIONIAS DIOICA, *Starwort or False Unicorn*. This is another of the loosely prescribed uterine tonics.

In large doses it is a cardiac depressant, emetic, and vermifuge. Cattle are killed by eating it, and its decoction is fatal to insects and small animals. It is usually prescribed in doses altogether too large.

In moderate doses (f.e. or ec. tr., 5 to 10 m) its influence is upon the glandular tissues of the digestive and urinary systems, improving digestion, and toning the liver. It is a tonic to the genito-urinary apparatus, overcoming the phosphatic diathesis, relieving albuminuria if due to irritation, and favorably influencing diabetes mellitus and insipidus. It relieves a tender, aching kidney, but is not applicable in degenerative processes.

In small doses (f.e. or ec. tr., 1 to 3 m; 0, 5 m every two hours) it is distinctly curative in pelvic engorgement, resulting in a dragging sensation or uterine prolapsus with too frequent or profuse menses. This is all it does effectively in uterine diseases, and the small dose is more prompt in action than the large dose usually given. Remember the toxicity of this drug.

HEPAR SULPHURIS, *Impure Calcium Sulphide*. The salt employed by the homoeopaths in 1x to hasten suppuration and in 6x in the treatment of scrofula and ulcerations generally. It probably presents no advantages over ordinary calcium sulphide (q. v.) unless it be to eliminate mercury from the system.

HEROIN, *Diacetyl-Morphine*. This allotropic form of morphine is an acetic ester of morphine insoluble in water but soluble in very dilute solution of acetic acid. It should not be combined with alkaline mixtures. It is advocated as a substitute for codeine, and is used in doses of 1-32 to 1-6 gr. It is a cough sedative and antispasmodic. It is a very frequent constituent of proprietary expectorants sold to the public generally. In these mixtures it is more dangerous than is morphine, since it should never be administered to children. The present author has seen heroin give rise to very sudden depression even in quite small doses. The journals frequently report such cases, and it is developing that heroin sometimes induces a drug habit much more intractable than the morphine addiction. If employed at all, heroin should be used with the utmost of care.

HEXAMETHYLENAMINA. The U. S. P. designation for hexa-methylene tetramin, an ammonia condensation product of formaldehyde. It is the same general type of product as are "Urotropin," "Formin," and "Cystogen."

These products increase the excretion of urine and uric acid and carry an antiseptic direct into the urinary tract. The dose is from 1 to 10 gr. Average dose, 4 or 5 gr., dissolved in hot or carbonated water, after meals.

HOMATROPI^NÆ HYDROBROMIDUM. This agent is seldom employed internally. The U. S. P. wisely gives its dose as 1-128 gr. (average). This is safe, but it has been advised in 1-20 gr. for excessive night sweats. In regard to this, it may be said that it takes doses verging upon the toxic to control severe night sweats with any of the belladonna derivatives. On the other hand, the experience of some of the tuberculosis sanatoria is that proper diet and fresh air render such agents almost unnecessary. Personally, I have frequently controlled excessive sweats with *small doses* of muscarine in some form.

In the determination of refraction in ophthalmic practice this mydriatic is prompt but evanescent. Use 4 gr. to the ounce of distilled water.

HUMULUS, *Hops*. This homely remedy is successfully employed in nerve irritation and insomnia due to mental distress, especially when associated with poor digestion. Locally, a muslin bag filled with hops is applied, after immersing in hot water, to local inflammations and painful areas. Dose, tr., 1 to 2 f3.

"*Lupulinum*" (U. S. P.). *Lupulin* contains to the full the virtues of hops. It is anaphrodisiac, used in priapism and chordee. It acts in harmony with camphor monobromate (*lupulin* and monobromate, 5 gr. each in capsule) in this connection. The ec. tr. in 10 m doses, combined with Tr. Gentianæ Co., is a tonic in irritable nervous states vastly superior to beer or the so-called malt tonics.

HYDRARGYRUM, See Mercury.

HYDRASTIS, Golden Seal. This highly useful but expensive drug has many preparations. The fluidextract well represents its activities. The U. S. P. gives the average dose as 30 ℥. Personal experience leads me to believe it would be wise to divide this figure by three. It can be given in diluted and flavored glycerine or in some simple elixir. The U. S. P. tincture is preferable in some regards. Dose, 20 to 60 ℥. The ec. tr. is an alcoholic fluidextract containing a bitter coloring principle, berberine, the so-called white alkaloids, hydrastine, canadine, resin, and oily principles. Use in half the fluid-extract dose. Lloyd's colorless hydrastis is non-alcoholic and contains the colorless alkaloids, inorganic salts, and considerable glycerine. *Hydrastine* is given in doses of from $\frac{1}{2}$ to 3 gr. as usually made, but the hydrastine (alkaloid) as made by Merck and others in one-third this dose. Merck's hydrastine hydrochlorate is given in doses of $\frac{1}{4}$ to 1 gr. It is a white powder, whereas Merck's hydrastinine hydrochlorate is a yellow, crystalline powder, and the maximum dose is $\frac{1}{2}$ gr. The alkaloids are very high in price, and are apt to disappoint in practice when given internally. Where something cheaper will do plants containing considerable berberine, such as *berberis aquifolium*, or else berberine phosphate, serve very nicely. Really, hydrastis is overrated to-day and *berberis* is not sufficiently appreciated. *Berberis* combines in ordinary mixtures much better than does hydrastis.

In physiologic action hydrastis stimulates the nervous system in a manner somewhat similarly to brucine. Strychnine, brucine, and hydrastis are a descending scale in intensity of nerve stimulation, but each successive step downward is one toward more *prolonged action*. They bear the same relationship as do nitroglycerine, dynamite, and gun powder.

Hydrastis stimulates respiration and circulation; it stimulates muscle tonus and inhibits fatty and other degenerative muscle changes. In the gastro-intestinal region it stimulates peristalsis and increases normal secretions.

The therapy naturally divides into three headings. When the nerve and muscle stimulating properties are called for, give large doses; to influence secretion, small doses as a rule. It is also used locally.

In large doses it is employed in chronic alcoholism in conjunction with gold, strychnine, gentian, and capsicum. It is useful in general debility with defective assimilation and nerve atony. In this connection it operates in harmony with iron, quinine, and ignatia. In uterine sub-involution and passive post-partum hemorrhage give in large doses with other indicated remedies. Large doses are recommended in night sweats and in altered states of the heart muscle. In marked atonic dyspepsia with jaundice large doses are demanded at first.

In small doses it applies to many functional disorders of the stomach, especially when catarrhal in character. Capsules containing the powdered drug act well in this connection. It may be combined with laxatives, digestants, and bismuth. In irritable states of the stomach the fluid preparations, especially the colorless hydrastis, probably act better. In dilatation of the stomach, long-continued use of small doses of hydrastine hydrochlorate is effective. The homœopathic's 2x tablet triturates seem to act nicely. In chronic constipation with hepatic congestion it acts nicely combined with leptandra, and, when there is nausea or sick headache, iris or chionanthus. In the second stage of gonorrhea and when ulcers upon the skin resist local treatment give hydrastis.

In all catarrhal conditions characterized by a thick, yel-

low,ropy secretion, no difference where located, give small doses of hydrastis. (F.e., 3 to 5 ml.)

Locally, in varying strength, to relaxed and unhealthy mucous membranes and as a gargle in ulcerated sore mouth, colorless hydrastis in 5 to 30% solution. Hydrastine hydrochlorate (Merck) in conjunctivitis, 1-10 to 1-5% solution; gonorrhea, $\frac{1}{4}$ to $\frac{1}{2}\%$ solution; in skin diseases, 1%. The glycerite of hydrastis is used in cervical erosions.

HYDROGEN PEROXIDE, "*Aqua Hydrogeni Dioxidi*." (U.S.P.) Disinfectant, deodorant, styptic, and antizymotic. Used externally in diphtheria, gonorrhea, abscesses, and wounds. Internally, in flatulence, catarrhal gastritis, fetid diarrhea, etc. Dose, 15 to 40 ml. diluted with water. In spray, 10% and stronger. Externally, up to full strength according to uses.

HYOSCYAMUS, *Henbane*. This good old remedy of our fathers has been, for some reason, pushed aside, although its powerful derivatives, hyoscyamine and hyoscine, have recently been given a dangerous prominence. For a discussion of them see Belladonna.

Prof. Locke has well said of hyoscyamus: "Compared with opium as a hypnotic and anodyne, though not so reliable, it is many times preferable for these reasons: It relieves spasms, quiets the nervous derangement, and produces sleep, with no arrest of secretions, and it does not constipate, nor does it arrest the flow of bile or urine. It may be employed when opium is contraindicated. It is a very successful agent in pulmonary affections. It lessens the cough and irritability, and does not arrest the secretions. In inflammatory conditions of the liver and kidneys it may be used to relieve pain, and here it is better than opium, for it acts without producing headache."

In large doses hyoscyamus must be employed with care, since it sometimes causes delirium and an eruption upon the skin. In tremors and contractures of paralysis agitans give full doses (f.e., 15 to 20 m.). In hallucinations and sleeplessness of the insane the same dose or a full dose of hydrobromate of hyoscine. In mania, delirium tremens, and puerperal insanity give fairly large doses, but where the delirium is "low and muttering" do not give large doses in any form of disease. Painful hemorrhoids, cancerous ulcers, and other painful visceral lesions are given ease by but moderate doses.

In small doses there is no doubt at all that hyoscyamus is a useful but neglected remedy. The eclectic indications are given as follows: "In all conditions where there are busy delirium, hallucinations, weight in the front part of the brain, extreme activity of the mind, disturbed sleep with wild and frightful dreams, coma vigil, flushed face, wild, red, and restless eyes, it is a remedy. In the restlessness, ceaseless agitation, and insomnia of exhaustion, and in diseases of infants and of the extreme aged and feeble, it is especially applicable." They give it by dropping from 5 to 15 drops (according to age) of the f.e. or ec. tr. in half a tumblerful of water and giving a tea-spoonful of the dilution every fifteen minutes. They employ it a great deal in pneumonia in infants and the aged, in bronchitis and irritable cough, neuralgia of exhaustion, the bone pains of syphilis, ovarian and other visceral pain, nervous palpitation of the heart, and in hysteria. The eclectics are pretty careful therapeutists, and I doubt not they get good results from these small doses. In case of cough and other conditions with longer dose intervals they increase dose to some extent.

Homœopathic indications add little of any value, as they employ it in much the same manner as the eclectics.

They use the third dilution, however, in the muttering delirium of typhoid, but that is about as far as a level-headed homœopath will dilute this drug. Most of them use the tincture or the IX.

Personally, I get good results from small doses of the f.e.

HYPERICUM, St. John's Wort. This is purely a homœopathic remedy, and many writers make the ridiculous claim for it that its dilutions will prevent tetanus following punctured wounds.

So far as I can determine, the drug possesses astringent and sedative properties especially influencing terminal sensory nerve filaments. In larger doses it influences the nervous system at large.

In large doses (0, 5 to 20 M) it is recommended in nervous and spinal injuries due to shock or concussion, in painful spinal irritation without fever and in suppression of urine due to nervous shock. Probably other agents would serve as well or better in all these indications.

Locally (1 to 2 fl. 0 to 1 pint water), it is really a useful remedy in relieving the pain of lacerated and painful wounds in which nerves have been cut or bruised. It very promptly relieves the pain, and can be applied to advantage after proper antisepsis has been first carried out. Upon the unbroken skin it has little effect. The hypericum oil is largely used throughout Europe as an application to recent and painful contusions and excoriations. It appears to give satisfaction when the lesion is superficial. The non-alcoholic hypericum is used by homœopathic surgeons in the treatment of superficial burns. The ones among them who reject the "potency" theory employ this preparation internally in pretty large doses.

IBERIS AMARA, *Bitter Candytuft.* This is one of the remedies used from antiquity and recently reintroduced. It is used in enlarged heart to control vascular excitement and allay reflex irritability. In dyspnea and bronchial spasm, vertigo, and dropsy of cardiac origin it is highly recommended by many authorities. Its mother tincture appears to be the best preparation. Give in doses of 3 to 8 mL .

ICHTHYOL. An antiphlogistic, antiseptic, and alterative. Internally, its action is akin to sulphur, but its indications are not very clear and it is seldom so used. Some cases of nephritis respond to it. The homœopaths extol its lower "potencies" in chronic rheumatism and chronic hives and in stomach troubles with nausea and increased appetite.

Externally, it is used in from 5 to 50% proportions in ointments, lotions, etc., in erysipelas, lymphatic indurations, rheumatism, indolent injuries, scrofulous enlargements, and a host of skin diseases. Glycerine tampons to uterine os, 10%; bougies in gonorrhea, 1 or 2 mL . Use pure in ivy poisoning; 10% in oil sweet almonds, as an application in variola; in rheumatism, 3ii to adeps 5i. Before applying ichthyl, wash the parts with warm water and dry. After application to joints or severe lesions, it is well to cover parts with flannel and gutta-percha tissue.

There is no occasion to give over 30 mL (or grains) per day in any case, and it is wise to begin in any case except in ivy poison with ointments not exceeding 25%.

IGNATIA AMARA, *Bean of St. Ignatius.* This is a milder remedy than nux vomica, containing less strychnia. For stimulation and the general influence of large doses, nux vomica is to be preferred to it. This is also the case

when small doses are given to stimulate intestinal peristalsis.

In small doses ignatia has a field of its own, since it is less irritating to the nerves and possesses a more kindly influence in cases in which the emotional element predominates. Hence, it is serviceable in the illnesses of women of sensitive and excitable nature where nux vomica often aggravates the case. It can also be given for a great length of time where a mild nerve tonic is demanded. Its influence in hysterical and sexual neurasthenias and in prolonged nervous depression is much better than is that of nux vomica. Give of f.e. or ec. tr. 1-6 to $\frac{1}{2}$ m several times a day. It combines well with vegetable bitter tonics, generally.

INDIGO possesses a marked influence upon the nervous system. The homeopaths use the 3x in epilepsy with melancholia and in sciatica. Its value is problematical.

INULA, *Elecampane*. A tonic to the nutritive functions and to the respiratory and urinary tract. Its extractive principle, helenin, is said to possess antiseptic properties useful in typhoid, tuberculosis, and erysipelas.

This drug is given in three leading indications, viz., in atonic conditions of the gastro-intestinal tract, as a tonic following prolonged respiratory diseases, and in catarrhal states of the genito-urinary organs. Dose, f.e., 20 to 60 m. Helenin, 1-12 to $\frac{1}{4}$ gr.

INFUSIONS (U. S. P.) ordinarily contain 5% of the drug, but digitalis is directed in $1\frac{1}{2}\%$ and wild cherry 4%.

IODINE (U. S. P. "Iodium"). See the text-books for a detailed consideration of this drug. The crystals are occasionally given in 1-10 gr. doses incorporated with

some inert substance, as a triturate. The maximum dose is 1 gr. The tincture may be given internally in 1 to 5 drop doses, well diluted. Iodized sesame oil is given in doses of 1 to 3 fl.oz. in emulsion. It liberates its iodine slowly when ingested. The decolorized tincture, used internally, is absorbed without precipitation. The brown iodide of lime, originated by Nichols, is a loose combination of iodine and calcium oxide, and sets nascent iodine free when taken into the stomach. Give in doses of $\frac{1}{4}$ to 1 gr. Spongia or burnt sponge (q. v.) is another available way for giving iodine.

There has been a good deal of dissatisfaction with the iodides when prompt results are desired, and iodine is coming more into use as an internal remedy. Either iodized lime or spongia may be used with assurance in non-diphtheritic croup or glandular troubles. The other preparations are available, but are more irritating.

IODOFORMUM, Iodoform. This agent is used more or less internally, being of real value in the treatment of tuberculosis with intractable hemorrhage and of some utility in tubercular meningitis. It is exceedingly disagreeable to the patient, however. Dose, $\frac{1}{2}$ to 2 gr.

Locally, iodoform is much used, although one must avoid its toxic influences by the exercise of due care. It is used in wounds freely discharging and in putrid sores. It does not appear to stimulate granulation to any great extent. Vaginal suppositories may contain 5 gr. of iodoform; rectal suppositories 2 or 3 gr. Ointments usually contain 5 to 10%. In tubercular joint affections, injections of 10% oily emulsions are used. The soluble urethral bougies should seldom contain over 1 gr.

IPÉCACUANHA, Ipecac. *In large doses* (10 to 20 gr.; f.e. or ec. tr., 10 to 20 ml. in hot water; or syrup, 3 or 4

teaspoonfuls) ipecac is a most valuable and safe emetic, acting without prostration. It is the best emetic for children or to relieve sick headache due to undigested food in adults. In cases of poisoning, ipecac is not sufficiently prompt unless combined with other emetics. It is well to remember that continued large doses of ipecac will produce a most obstinate diarrhea.

In moderate doses it is expectorant, and is indicated in coughs with deficient secretion. One mL doses of the fluidextract at greater or less intervals, in accordance with degree of relaxation desired, is the average for an adult. In the sudden bronchitis of childhood, 5 to 10 mL doses of the syrup every hour until nausea is induced gives excellent results. In the later stages of pneumonia in adults the powdered ipecac is used in $\frac{1}{2}$ gr. doses three or four times a day. Small doses of Dover's powder and quinine, combined in a capsule, may be given, and seems to promote the process of resolution. Some authorities recommend moderate doses of ipecac in hemorrhage. It is a vascular sedative, relieving blood pressure, and hence its discreet use in this connection is to be commended.

In small doses (f.e. or ec. tr., 1-10 to $\frac{1}{4}$ mL) ipecac is indicated in irritation of the mucous membranes, especially of the gastro-intestinal tract when there is deficient or defective secretion. Nausea and vomiting, where the mucous membranes are relaxed and a white coating upon the tongue, very promptly yield to small doses of ipecac. The small dose in combination with aconite is of peculiar value in many of the diarrheas of infancy. In dysentery or in cholera infantum the same combination is effective in alternation with an antiseptic or following a chalagogue. Soon as the acute stage is over, discontinue the ipecac and aconite. If there is dysenteric tenesmus use

gelsemium in the place of aconite. In the pneumonia of childhood small doses act well in combination with the other remedies indicated. Ipecac, bryonia, and aromatic spirits of ammonia make a serviceable mixture for these cases.

IRIDIUM. In homoeopathic practice, 3x triturations of this metal are used in anemia and as a restorative after exhausting disease.

IRIS VERSICOLOR, *Blue Flag*. *In large doses* a reliable preparation of iris containing the unchanged oleoresin is purgative, cholagogue, and diuretic, but large doses are irritant and should not be long used except in intractable diseases of the liver. Give 10 to 15 ml doses of ec. tr., as the fluidextract is seldom active. The trouble with this drug is that its oleoresin is gradually replaced with red tannates during growth. This is particularly the case with all southern-grown iris. The eclectics value this drug very highly and take the utmost care in its manipulation, whereas it has been dropped from the U. S. P., since the official preparations failed to give results.

In small doses it is a highly useful remedy, being markedly alterative and directly stimulant to the entire glandular system, but more particularly influencing the pancreas and the intestinal glands. It promotes retrograde tissue metamorphosis. It is indicated in deficient elimination from the skin and kidneys accompanied by jaundice and clay-colored stools, in irritable conditions of the gastro-enteric mucous membranes occasioned by altered or morbid secretion and by inaction of glandular tissues. The oleoresin in 1 or 2 gr. doses is valuable in chronic and malarial jaundice, but in most of the indications for small doses of iris a fluid preparation is preferable. Iris is peculiarly effective in sick headache and

cholera morbus, nausea, pyrosis, and gastralgia. One or 2 m doses of ec. tr. every hour suffice in these indications, and some cases do well upon even smaller doses. As an alterative, in 3 to 5 m doses, it is effective in many glandular enlargements and in pustular and chronic skin diseases. The dose may be run up to 10 m , especially in the treatment of syphilis marked by glandular inactivity, but do not begin with such large doses.

There is no reason why a reliable fluidextract of this drug cannot be made, and doubtless some makes are reliable. The U. S. P. revisers made a distinct mistake in dropping it from the eighth revision. The homœopaths claim that dilutions of this drug are effective in a host of subjective phenomena that proper analysis resolves into physiologic indications similar to those stated above. Their lower triturations of *Irisin* are effective, and are used by them in gonorrhœal rheumatism as well as in digestive disturbances.

IRON. See Ferrum.

JABORANDI. See Pilocarpus.

JACARANDA, *Caroba Tree*. The homœopaths use the tincture of jacaranda in venereal diseases and rheumatism.

JALAPA, *Jalap*. This is an old remedy little used at present. It is an active cathartic, principally influencing the small intestine. The doses as now given are—extract, 2 to 5 gr.; compound powder, 20 to 60 gr.; resin, 1 to 3 gr.

The old “Beach’s anti-bilious physic” was composed of powdered jalap, 8 \mathfrak{z} ; powdered senna, 1 pound; ginger, 1 \mathfrak{z} . Triturate together and give a large teaspoonful, in sweetened water, at one dose. This mixture is effective in case of impacted rectum. A dose can be given every

six hours until free evacuation results. Jalap combines well with santonine as a vermifuge, and is a useful laxative, in moderate doses, in cases where hemorrhoids contraindicate stimulating purgatives.

JAMBUL, *Syzygium Jambolanum*. The seed of this tree possesses an inhibitory influence upon diastasic fermentation, and its administration in saccharine diabetes is followed by a reduction in the sugar eliminated. Aside from this action it increases renal blood pressure, stimulates respiration and intestinal peristalsis, and is non-toxic in very considerable doses. It is a remedy highly esteemed by intelligent physicians in India and recently taken up by American homœopathists who confirm the statements of these gentlemen. The powdered seeds are given in 5 to 10 gr. doses three or four times a day. It acts best in chronic cases in which only a moderate amount of sugar is found, and it also exerts a healing influence upon diabetic ulcers. A good fluidextract is on the market.

JEQUIRITY, *Abrus Precatorius* or *Indian Licorice*. This is a highly toxic agent, the seeds containing proteid poisons with properties similar to the toxic agents of snake venom. A solution of *jequiritol* applied to the eye causes a purulent inflammation of a most violent character. By means of very weak infusions a moderate inflammation is induced that displaces an existing purulent state by engrafting a new one. Hence, it is used in pannus and chronic trachoma and sometimes in chronic conjunctivitis and purulent ophthalmia.

Merck's *jequiritol* is a sterile preparation of this agent. Begin by instilling into the eye 1 drop daily of "Solution No. 1" and increasing by 1 drop daily until the desired reaction results. All preparations of *jequiritol* soon spoil after being diluted with water, and should always be made up fresh as desired. This is a valuable agent, but must be handled with great caution.

JUGLANS CINERÆ, *Butternut*. The inner bark of the root was at one time much employed in medicine, an aqueous extract being used in doses of from 1 to 5 gr. This remedy is an instance of the therapeutic iconoclasm of to-day. The whole effort is to develop *new* remedies. From the very dawn of medical science, good old remedies, such as juglans, have been produced by nature and to-day do just the same things as they did for our fore-fathers, only we are forgetting all about them in our foolish haste to have the chemist make for us remedies seldom the equal of those elaborated by nature.

In large doses (f.e., 20 to 30 ℥; ec. tr., 20 ℥; juglandin, 1 gr) it is cathartic and cholagogue, producing large, bilious motions without griping. It is as gentle as rhubarb, but much more thorough. The extract is made up into pills, and is effective in 5 gr. doses. It is highly useful in malarial fevers in cathartic doses.

In moderate doses (extract, 1 gr; f.e. or ec. tr., 3 to 10 ℥) it is a mild laxative, valuable in habitual constipation and the resulting dyspepsia, and exercising a most excellent influence upon the liver.

In small doses (f.e. or ec. tr., 1-3 to 1 ℥) it is indicated in skin diseases induced by gastro-intestinal troubles and faulty elimination, such as eczema, acne, impetigo, pemphigus, and several of the scaly skin diseases. Small doses will also relieve occipital headache associated with hepatic disturbances.

JUNIPERUS COMMUNIS, *Juniper*. A diuretic used in nephritis, cystitis, and renal hyperemia after subsidence of acute symptoms. Use an infusion (1 3 berries to 1 pint boiling water) in doses of a wineglass or the *Oleum juniperi* in 3 ℥ doses upon sugar.

KALI BICHROMICUM and other kali salts. See under Potassium Salts.

KALMIA LATIFOLIA, *Mountain Laurel*. This plant possesses slight toxic influences due to andrometoxin. It is an alterative with mild sedative properties and may, with advantage, enter into vegetable alterative mixtures used in glandular troubles and as an adjuvant to specific treatment in secondary syphilis. It has some slight reputation in the treatment of cardiac hypertrophy. The homœopaths value it in painful rheumatic affections and facial neuralgia, and use it more or less in "tobacco heart."

In my own experience, it has acted markedly as a sedative, but seems to possess no advantages over veratrum except in nerve pain. As an alterative it cannot be pushed to the point usually necessary without unduly slowing the pulse. Ec. tr., $\frac{1}{2}$ to 5 m; @, 3 to 15 m. Be careful with large doses.

KAMALA, *Mallotus Philippinensis*. This is an efficient remedy for tapeworm, but it tends to gripe and should be administered in combination with carminatives or a small dose of opium. (F.e. or ec. tr., 30 to 60 m, repeated if necessary.)

KAOLINUM, *Kaolin* or *China Clay*. One of the inscrutable acts of the revisers of the U. S. P. was to make this native silicate official as an ingredient of "*Cataplasma kaolina*," an official imitation of the proprietary paste of kaolin, glycerine, and antiseptics. Following this, in the very excellent but plenarily inspired series of articles in the *Journal of the American Medical Association*, all the proprietary mud poultices (uninspired and non-canonical) are denounced as heretics and deceivers of the elect. As a practical matter of fact, no druggist will ever care to make up a batch of the official cataplasma in a mortar more than once. Furthermore, it cannot be well made except by machinery. It needs very little study of the ingredients of these "mud poultices" to define their lim-

its in therapeutics. While the literature issued concerning them is utterly ridiculous in some of its phases, still these preparations have a very positive usefulness in many conditions not very markedly inflammatory or painful. Personally, I object to using heavy clay poultices upon the chest in severe diseases like pneumonia. The troublesome details of application and removal, as well as the weight, distress the patient, and, after they are removed, he is very apt to chill. I use a rather homely plaster in these cases of chest trouble. Take $\frac{1}{2}$ ʒ each of capsicum and Scotch snuff and 2 ʒ of powdered lobelia seed. Triturate this well together and spread more or less thickly (according to patient's age) upon a cloth spread with lard or vaseline, and place upon the chest; or this powder can be mixed with mustard and hot water, or ground flaxseed and boiling water, and applied as a wet poultice. These agents have a real medicinal influence, whereas the action of clay and glycerine is very slight in severe disease.

KAVA-KAVA, *Piper Methysticum*. This agent slows the pulse, produces vigorous cardiac contraction, inhibits reflex action, is sudorific, and is somewhat anesthetic.

In large doses it is employed by the natives of the South Sea Islands as the main ingredient of a peculiar and slightly intoxicating beverage. Very large doses are not employed in medicine.

In moderate doses (f.e. or ec. tr., 5 to 20 m; solid extract, 2 to 5 gr.) its influence upon the mucous membranes of the genito-urinary apparatus makes it highly useful in chronic gonorrhea, gleet, chronic catarrh of the bladder, and nocturnal enuresis.

Incidentally, this drug markedly stimulates the appetite and improves digestion. This fact makes it of peculiar value in many genito-urinary cases. It is an agent worthy of more general employment.

KINO. An astringent to mucous surfaces and useful in night sweats, polyuria, leucorrhea, and watery diarrhea characterized by relaxation. U. S. P. tincture in doses of 1 teaspoonful.

KOLA, *Cola Acuminata*, is a heart tonic inducing diuresis and retarding tissue waste, and indicated in depressed and enfeebled states of the heart, muscular system, and in depressed states of the mind and nervous system. It has also been recommended in chronic diarrhea with lack of tone. Dose, f.e., 10 to 30 ml.

KRAMERIA, *Rhatany*. An astringent, used chiefly in diarrhea. Average dose, 15 gr., or f.e., 15 ml. The U. S. P. *Trochisci krameriae* are a pleasant astringent useful in relaxed forms of sore throat.

LACHESIS, *Virus* or *Venom of Lance Headed Viper*. Like all snake venoms, this substance decomposes the blood, rendering it more fluid and inducing septic states. It is well known that a degree of immunity results from doses of attenuated virus, very minute at first and gradually increased. The homœopaths use lachesis very prominently upon some such basis. They do not claim that this agent inhibits micro-organisms, but they do claim that it is a remedy in septic intoxication in which pus is not a factor or not the main one. They use it in diphtheria, peritonitis, erysipelas, and other grave diseases in the sixth to two hundredth "potency," and have devoted an astonishing amount of study to this peculiar drug. It is illustrative of a rather long list of organic poisons employed in their practice. We can well omit detailed consideration of the rest of them.

So long as we use various forms of serum treatment and find success therein, we cannot altogether combat the homœopathic employment of these organic poisons. Per-

sonally, I believe they have gotten hold of the fringe of a big question which neither school knows much about as yet. As we look upon the matter, it certainly does appear foolish to contend that infinitely attenuated snake venom has any influence when taken into the stomach in view of the fact that one can suck the pure virus out of a wound and not be harmed thereby. However, they claim that there are toxines in an assimilable form in their triturations. We cannot deny that, and so the matter rests. In view of the fact that many homœopaths use attenuations of vaccine virus in tablet triturate or powdered form and make the claim, with no more substantial basis than the "law of similars," that this form of alleged vaccination protects against smallpox, it is high time our laboratory experts looked into these matters. Personally, with all deference to our homœopathic friends, it looks as if they are running their similar proposition so far into the ground that they will wake up to the fact that they have buried it. If lachesis influences blood sepsis, and if we can cure tuberculosis by attenuated tubercular nodules, and cancer by attenuations of its own juices; if the poison of the toad cures epilepsy and feeblemindedness; triturated plant lice, toothache; triturated bedbug, malaria; triturated ladybug, neuralgia; triturated mosquito, hives; potatobug, gonorrhea; crushed live ants, gout; meconium from the amniotic fluid of the colt, chorea; grease in horses, smallpox; triturated gonorrhœal virus, chronic rheumatism; triturated "polecat perfume," whooping cough; and a long list of other abominations, each a "potentized" cure in its way, we may just as well go to China for our therapeutics. As a matter of fact, live ants contain formic acid, which has some influence in gout and rheumatism, and possibly the rest of these agents might, in some

round-about way, slightly influence certain diseases; but it is unworthy of a school of therapeutics to resurrect these old Oriental horrors in medical practice. The *modern* school of homœopaths largely agree with what is here said. If lachesis and other organic poisons ever do attain a place in scientific therapeutics, it will be by sterile attenuations employed hypodermically.

LACTUCARIUM, *Lactuca Virosa*. This U. S. P. substance is apt to be unreliable, but the tincture (50%), when made before changes occur in the drug, is a fairly dependable remedy in doses of 10 to 60 m. Squibb makes an excellent fluidextract of lettuce. It is a nerve sedative and mild hypnotic quite useful in functional disturbances. In irritable coughs it finds quite a field of usefulness. With some women it acts as a galactagogue.

LAPIS ALBUS, *Silico-Fluoride of Calcium*. In doses of the IX trituration this substance is asserted to be useful in goitre and scrofulous sores.

LAPPA, *Burdock Root*. An alterative used in skin diseases and valuable in irritation of the urinary apparatus. F.e. or ec. tr., 10 to 60 m.

LAUROCERASUS, *Cherry Laurel*. This agent is of varying strength, depending upon the amount of its contained hydrocyanic acid. Therapeutically, either bitter almond or peach bark is more dependable, although not so pleasant. Cherry laurel water is a pleasant adjuvant if care is taken not to exceed doses of 20 m. For therapeutic purposes the mother tincture in 1 or 2 m doses is preferable. Spasmodic, tickling cough is quickly relieved by this agent, and an irritable stomach is oftentimes soothed by small doses taken upon cracked ice.

LEAD. See *Plumbum*.

LEDUM PALUSTRE, *Marsh Tea.* This plant and the allied *Labrador Tea* have been long used in medicine for a host of rather contradictory conditions. The homœopaths use small doses of the tincture in rheumatism beginning in the feet and to antidote the effects of the stings of insects. It has no established place in therapeutics.

LEPTANDRA, *Culver's Root.* This agent is cholagogue, laxative, and alterative, and stimulates the portal circulation. In malarial and jaundiced conditions it is a very superior laxative, but its fluid preparations are so disagreeable to the taste and so readily precipitate that it is usually best to use *Leptandrin*, either pure or preferably in 1x trituration; Merck's leptandrin, 1 to 5 gr.; or the homœopathic 1x in 5 to 30 gr. doses; solid extract, 3 to 8 gr.

Leptandra is more markedly tonic than are most of the alterative cholagogues. It takes very considerable doses to be distinctly purgative. It is a good laxative for children who respond nicely to leptandrin 1x. It is in small and continued doses that this agent is most useful. In jaundiced malarial conditions with indigestion, capsules containing leptandrin, quinine, and hydrastis in proper doses give most happy results.

LILIUM TIGRINUM, *Tiger Lily.* The pollen and bulbs of various species of lily have long been known to be somewhat toxic. Among the aborigines and in domestic practice they have justly been esteemed as useful remedies in various uterine conditions, and so much evidence in their favor has accumulated that we will here consider the most representative agent of the class.

Where uterine or ovarian engorgement or congestion gives rise to reflex neuralgias, headache, or nausea, tiger lily is a useful agent. These are chronic conditions, and

the remedy must be used for several weeks at least. It gives results in proper cases combined with adequate local attention. The ec. tr. is given in 1 to 5 ml doses, four times a day, for two to four months. The dilutions used by the homœopaths are inadequate in practice, although their indications are quite suggestive. The physiologic action has never been adequately worked out, so far as I can learn.

LINIMENTUM, Aconiti et Chloroformi N. F., a useful but toxic anodyne embrocation. *Ammoniæ, U. S. P.*, a stimulant anodyne. *Belladonnaæ, U. S. P.*, an anodyne. *Camphoræ*, or "Camphorated Oil" (2% camphor), anodyne and rubefacient. *Cantharidis* (15% in turpentine), a counter-irritant to be used with care. *Calcis, U. S. P.*, or "Carron Oil," for burns. *Chloroformi, U. S. P.* (30%), anodyne. *Iodi, N. F.* (12½%), discutient. *Plumbi subacetatis* (35%), antiphlogistic. *Saponis, U. S. P.* (6% soap, 4½% camphor), stimulant, rubefacient. *Saponis mollis, U. S. P.*, formerly known as "Tincture of Green Soap," used in surgery and dermatology. *Stillingia comp.* (eclectic; made of ol. stillingia, 1 fʒ; ol. cajeput, ½ fʒ; ol. lobelia, 2 fʒ; alcohol, 2 fʒ), a powerful stimulant and relaxant used in chest affections, croup, sprains, and spasmodic affections. *Terebinthinæ, U. S. P.*, counter-irritant rubefacient. *Terebinthinæ aceticum, N. F.*, "Stokes' or St. John Long's Liniment," antineuritic.

LIPPIA MEXICANA. A remedy of comparatively recent introduction, said to be of great value in chronic bronchial cough without secretion and the recurring cough incident to every cold following an attack of whooping cough. F.e., 10 to 20 ml.

LIQUORS, Acidi Arsenosi, U. S. P. (1%), average dose,

3 m. *Ammonii acetatis*, U. S. P. (7%), diaphoretic and diuretic, average dose, 4 fʒ. "Squibbs's *Liq. am. acet. concentratus*" is three times the strength of the U. S. P. preparation. *Antisepticus*, a new U. S. P. preparation of aromatic vegetable antiseptics with 2% boric acid, 1-10% benzoic acid, and 1-10% thymol; externally, $\frac{1}{4}$ to full strength; internally, 30 m to 2 fʒ. *Arseni et hydrargyri iodidi*, U. S. P. (1% of each salt), average dose, $1\frac{1}{2}$ m; this is known as "Donovan's Solution." *Bismuthi*, N. F., each fʒ containing 1 gr. bismuth and ammonium citrate. *Calcis*, 0.14%, U. S. P.; lime water. *Chlori comp.*, U. S. P., chlorine water, average dose, 1 fʒ. *Cresolis comp.*, U. S. P. (50% cresol), a saponaceous antiseptic and disinfectant, used externally in 1 to 3% solution. *Ferri chloridi* (10% metallic iron), average dose, $1\frac{1}{2}$ m. *Fe. et am. acet.* (Basham's Mixture), average dose, 4 fʒ. *Ferri subsulphatis* (Monsel's Solution), used externally. All these iron solutions are from U. S. P., which also unwisely lists: *Ferri tersulphatis*, very liable to be mistaken for the subsulphatis. The tersulphate is irritating and less efficient than the former preparation. *Formaldehyde*, in practice of varying strength, but officially should be 37% absolute formaldehyde gas; use in $\frac{1}{4}$ to 2% solution. *Hydrargyri nitratis*, U. S. P. (60%), a powerful caustic. *Iodi comp.* (Lugol's Solution, I. 5%; K.I., 10%), average dose, 3 m. *Magnesii citratis*, U. S. P., laxative in average dose of 12 fʒ. *Plumbi subacetatis*, U. S. P. (25%), known as Goulard's Extract, astringent and antiseptic; used in making *Plumbi subacetatis dilutus* (1%), used externally undiluted. *Potassi arsenitis* (1%), Fowler's Solution; average dose given in U. S. P. as 3 m; in practice most physicians give less. *Potassi citratis*, U. S. P. (8m), average dose, 4 fʒ. *Potassi*

hydroxidi, average dose, 15 ml. *Sodæ chlorinatæ* (La-barraque's Solution), average dose, 15 ml. *Sodii arsenatis*, U. S. P. (1%), average dose, 3 ml. The National Formulary has a similar title, but this preparation is only one-tenth the strength of the U. S. P. preparation. Be exceedingly careful not to confound the two. The N. F. preparation should be dropped entirely in view of the concentrated U. S. P. product. *Sodii hydroxidi*, U. S. P. (5%), "average dose, 15 ml." This is "caustic soda," and its internal use is open to question. If used at all, it should be much diluted. *Sodii phosphatis comp.*, U. S. P. This is a liquefied sodium phosphate, and contains traces of sodium nitrate and citric acid. It is a useful laxative in doses of 2 fls, well diluted. *Zinci chloridi*, U. S. P. (50% by weight), caustic. As a disinfectant, use 1 pound to 2 gallons of water.

LITHIUM, *Lithii Benzoas*, antilithic and internal antiseptic. Both natural and synthetic preparations are available, and are used in doses of 5 to 20 gr. The *Bromide* is used in the same dose as a nerve sedative. The *Carbonate* in 3 to 10 gr. doses is an antacid diuretic. The *Citrate* in 3 to 10 gr. doses is probably the most valuable salt of lithia, used to neutralize or dissolve uric acid and as a remedy in rheumatism and gout. It is freely soluble in water. The *Salicylate* in 5 to 20 gr. doses is employed in rheumatism.

The effervescent lithia preparations are to be commended. Natural lithia water is oftentimes preferable to the salts, but the ingestion of large quantities of water with the salts overcomes, in a measure, the deficiency of the U. S. P. preparations.

LOBELIA, *Indian Tobacco*. This old-fashioned drug is not sufficiently appreciated by the "regular" physicians

of to-day. In moderate and small doses it is an exceedingly valuable agent. The fluidextract is a good preparation, the average dose of which is 8 mL , but a more uniform preparation is the ec. tr., which is made from the seed. It is equivalent to the fluidextract of the seed. The seed contains twice as much lobeline (the narcotic principle) as does the herb. They also contain a fixed oil. Emetic properties are not so marked in the preparations of the seed as in that of the whole plant; in consequence, physicians who have used only the U. S. P. preparations cannot apprehend the eclectic appreciation of this drug. I have stated that the average dose of the fluidextract is 8 mL . That is what the U. S. P. gives, and it is therefore not to be wondered at that two or three experiences with lobelia, used as thus directed, is usually all the practician cares for when we remember that 10 mL of this preparation is the emetic dose. The maximum dose of ec. tr. is 30 mL .

In large doses (f.e., 10 mL ; ec. tr., 20 to 30 mL) lobelia is emetic and very depressing, with relaxation and a feeble pulse. Owing to its depressing respiration in a similar manner to tobacco, its use as an emetic is seldom justified except in sthenic conditions or in emergency.

In large medicinal doses not emetic (f.e., 7 or 8 mL ; ec. tr., 10 to 20 mL) it is useful where there is nerve tension and a spasmodic tendency, with flushed face and contracted pupils. Thus, it is useful in spasmodyc asthma during a paroxysm, in puerperal eclampsia, tetanus, the spasms of hydrophobia and strychnia poisoning, hysterical convulsions, angina pectoris, where the patient is not feeble, and in obstetric practice, where a rigid os and too great fullness of perineal tissue delay labor. In all these conditions judgment must be used, and these large doses not be often repeated. From large experience with this

drug, I prefer the ec. tr., and find that capsicum in full doses administered with it overcomes depression. That was a combination of the old-time herb doctor, but it was a good one.

In moderate doses (f.e., 1 to 3 ml; ec. tr., 2 to 5 ml, if at long interval; f.e., 1 ml, or ec. tr., 2 ml or less, if given frequently) lobelia is indicated in oppressed breathing and in respiratory troubles of an irritating character. In spasmodic croup the dose may be gradually run up to the point of slight nausea, since children tolerate the drug well. In whooping cough and spasmodic coughs generally it is useful. In some cases of congestion of the lungs it is very effective. In many conditions of disease its use to relax the muscles is effective, and this is particularly true in sthenic fevers and some forms of malaria.

In small doses (f.e., $\frac{1}{2}$ to 1 ml; ec. tr., 1 to 2 ml) lobelia, like narcotic agents generally, has a transient stimulating effect upon the nervous system and augments the secretions. Its influence is directed largely to the sympathetic nervous system, and thus promotes secretion and nutrition. Because of this, alterative properties have been attributed to it, but these effects are too transient to class it as a true alterative. In these small doses it appears to promote digestion when there is a tendency to colic, and is a useful remedy with children. The homœopaths use it in dyspnea with good effect and in gastric disturbances caused by drunkenness. They also use the tincture of *Lobelia syphilitica* in cases of influenza with Eustachian catarrh and coryza. In the nervous prostration of influenza they use the *Purple lobelia*. The homœopathic tinctures, in doses of 1 or 2 ml, are of some degree of utility in the indications noted, but the doses must be frequently repeated, and it must be remembered that febrile states

are not met by these small doses. They relieve symptoms, and that is about all they do. These tinctures are much weaker than the f.e. or ec. tr.

Lycopodium, Club Moss. The sporules are used as a dusting powder in regular medicine. In sectarian practice, lycopodium is esteemed as a valuable remedy. As a matter of fact, the sporules are inert when ingested in their natural state, but when triturated or comminuted 47% of the resulting paste is a bland oil with properties said to resemble santal-wood oil therapeutically. In addition to this oil, there are volatile bases which have not been adequately investigated, but presumably have an influence in stimulating tissue metabolism. They are irritants, but are carminative when well diluted. Hence, although the sectarians are derided for using this agent internally, a little thought will show that the alcoholic tincture and the low triturations contain quite active substances. It is with regret that I cannot supply full physiologic data, but chemically the active bases are akin to methylamine and probably are partially combined with phosphoric anhydride, and to work out the physiologic action would be a complex proposition.

In large doses (ec. tr., 10 to 15 ml) lycopodium is of value in gonorrhea after the subsidence of acute symptoms, and in gleet. Give well diluted in water and glycerine.

In small doses (ec. tr., $\frac{1}{2}$ to 2 ml; 0, 1 to 4 ml) it is adapted to urinary and digestive troubles where the uric acid diathesis and inactive liver and glandular functions are a factor. It is a gastric sedative, relieving pyrosis and flatulence. Cystic catarrh and lithemia are markedly relieved by this agent.

In homœopathic practice minute doses of this drug are used symptomatically in a host of chronic conditions due

to defective metabolism. It is a drug they value highly and use in high dilution. The present author pleads ignorance in the use of the dilutions, but has found small doses of the ec. tr. a most satisfactory drug, and uses it almost daily. The sectarian literature concerning this drug is well worth careful study.

LYCOPUS VIRGINICA, *Bugleweed*. A remedy used largely by the eclectics. The ec. tr. is made from the green herb, and is very active. The maximum dose is 20 ml.

In diseases of the heart, in moderate to full doses, it slows the pulse and relieves irritability and tumultuous action. It is recommended in hypertrophy and dilatation, and has been suggested in exophthalmic goitre. It is given to advantage in palpitation.

In respiratory diseases it is asserted to be of value in hemoptysis and incipient phthisis and in irritable coughs. It is not definitely ascertained that it has any direct action upon the lung tissue, but by its action in controlling the circulation and because of a mild nerve sedative influence it is a remedy of secondary importance in this connection. In my own experience, small doses are not effective.

MACROTYS. See Cimicifuga.

MAGNESIUM, *Borocitrate*. Antilithic and antiseptic in doses of 15 to 30 gr. *Magnesii carbonas*, U. S. P., in large doses is laxative (3i), or in small doses of 10 to 20 gr. is antacid, quite agreeable in action. These doses, once an hour until a laxative effect is produced, constitute an excellent treatment in sick headache and nausea due to acidity. The granular effervescent *citrate* is well tolerated by an irritable stomach, and is preferable for a purely laxative effect. The *glycerophosphate*, in 3 to

6 gr. doses, is an excellent nerve tonic, but its solutions do not keep well. The *hypophosphite* in slightly larger doses is also useful in nervous debility. Care should be taken in combining it, since it explodes in contact with oxidizing agents. The *muriate* is employed in homœopathic practice in liver diseases with constipation characterized by sparse and knotty stools. *Magnesii oxidum*, U. S. P., is the light, calcined magnesia, and acts similarly (but in somewhat less dose) to the carbonate. It is a valuable alkali to neutralize concentrated acids when taken in poisonous doses. Average dose, 30 gr. *Magnesii oxidum ponderosum*, U. S. P., is the heavy, calcined magnesia. Action and dose similar to the light. The *phosphate* is given in small doses dissolved in hot water, in homœopathic practice, in neuralgic pains relieved by warmth and in enteralgia and flatulent colic. *Magnesii sulphas*, U. S. P., or "Epsom Salt," is a cathartic of great value in doses of 4 to 6 3. If given in hot solution a less quantity suffices. It should always be well diluted. Doses of 20 to 30 gr. are aperient. This agent is of supreme value in abdominal surgery, since it does not cause active peristalsis. It is of value in lead poisoning. Meltzer and Auer assert that $1\frac{1}{2}$ to 2 f3 of a 25% solution injected into the subarachnoidal space of the spinal cord produces motor paralysis and anesthesia in the portion of the body below the site of injection. The anesthesia comes on within four hours, and continues for several hours. The heart is not affected, although respiration is slowed. Intravenous injections are not so efficient. This old drug is coming to be recognized as a remarkable agent, and is being exploited in a number of new directions. The homœopaths use small doses of the pure salt or the ix trituration in diabetes and in conditions of the skin giving rise to warts. The effervescent salt is offi-

cial. The *sulphite* is a valuable intestinal antiseptic, less disagreeable in taste than sodium sulphite. Dose, 5 to 30 gr.

MALTUM, *Malt*, is now official. It is diastasic, tonic, nutrient, and (in the form of *Extractum malti*, *U. S. P.*) an excellent vehicle for disagreeable drugs. The so-called malt tonics made by brewers differ little from the better grades of beer, ale, and porter. Several drug houses sell liquid malt preparations rich in diastase and containing very little alcohol.

MANGANESE, *Acetate*. Employed homœopathically in inflammation of the bones and joints and in syphilis. The *carbonate* is tonic in doses of 5 to 20 gr., while the *chloride* is used, in half this dose, as a tonic alterative. The *citrate*, in doses of 1 to 3 gr., is used in chlorosis. *Mangani dioxidum precipitatum*, *U. S. P.*, is alterative and emmenagogue, and is given in pill form in doses of 2 to 5 gr. The *glycerophosphate* is a valuable nerve tonic in doses of 3 to 6 gr. Like glycerophosphates generally, its solution does not keep well. Squibb's *peptonized manganese* is a mild remedy useful in chlorosis in doses of 10 to 20 gr. *Mangani hypophosphis*, *U. S. P.*, is a nerve tonic, and is recommended in tuberculosis. Give in doses of 1 to 5 gr. *Mangani sulphas*, *U. S. P.*, alterative, tonic, and cholagogue. Average dose, 4 gr. Externally, in 10 to 20% ointment, in stiff joints from gout and rheumatism.

MANNA, *Fraxinus Ornus*. A mild purgative given in doses of 1 to 5 gr. *Mannite*, or manna sugar, is used in diabetes in place of cane-sugar, and as a laxative for children. Dose, 6 to 8 gr. for adults.

MARRUBIUM, *Hoarhound*. A mild expectorant used principally in the form of a syrup. Macerate an ounce

of the dried herb for three hours in $\frac{1}{2}$ pint of boiling water, strain, and add water sufficient to make $\frac{1}{2}$ pint infusion; add 1 pound of sugar. This makes an agreeable syrup, suitable as a vehicle for any indicated active expectorant.

MASS. There are two U. S. P. preparations designated by this title, viz., *Massa ferri carbonatis*, or "Vallet's Mass," and given in doses of 2 to 5 gr., and *Massa hydrargyri*, or "Blue Mass," the average dose being 4 gr.

MATICO, *Piper Angustifolium*. Intestinal astringent and aromatic. Used also in cystitis and gonorrhea. Dose, f.e., 1 f3.

MATRICARIA. See Chamomilla.

MELILOTUS, *Yellow Melilot*, or *Sweet Clover*. This is a homœopathic remedy used for congestions and hemorrhages, in the "lower potencies," and should not be confounded with *Mallotus* or *Kameela*.

MENTHA VIRIDIS, *Spearmint*. Carminative and alternative. Spearmint is official, whereas peppermint is not, except in the oil and the spirit made from the oil. Spearmint tea is really of considerable service in the treatment of infantile colic and in the suppression of urine in children.

MENTHOL. Used externally as an analgesic, anesthetic, and antipruritic. It may be used full strength upon the unbroken skin. For tampons or use in contact with mucous membranes, use 1 part in 5 to 10 parts of oil or unguent. Its average dose internally is 1 gr., but other agents serve its indications much better. It is carminative and antispasmodic.

MERCURY. The official U. S. P. title for mercury is *Hydrargyrum*. The homœopaths call it *Mercurius*, and

they have the better title. We usually abbreviate it to "Hydrarg.", or even to "hydr." A great many drugs have Hydr. — — and conflict occurs, as witness—hydrastin, hydrangea, hydrated salts, hydriodic acid, hydrobromates, and hydrochlorates, hydrocyanic acid, hydrogen, hydrous wool fat, and a long list of synthetic chemicals.

Acetate, antisyphilitic in doses of 1-10 to $\frac{1}{2}$ gr. *Ammoniated*, used in ointments, 1 to 10%, as a parasiticide. *Hydrargyri chloridum corrosivum*, U. S. P., antiseptic, alterative, and antisyphilitic. Average dose, 1-20 gr. In small doses a tonic (1-100 gr.). Hypodermically used by dissolving $\frac{1}{2}$ gr. and 15 gr. of sodium chloride in 25 f3 of water and using from $\frac{1}{2}$ to 1 syringeful at a dose. For surgical antiseptic purposes, in solution 1:5000 to 1:1000. In homœopathic practice, the 3x is used with success in rectal tenesmus. Their ophthalmologists use a 1:1000 solution, injected hypodermically under the conjunctiva, in choroiditis with progressive myopia and aching pain. *Hydrargyri chloridum mite*, U. S. P. The tendency now is to use calomel in fractional doses (1-10 gr. triturates), hourly or half hourly, to effect. Large doses are cholagogue, and small ones at long intervals alterative. Quite apt to salivate. A very valuable intestinal antiseptic. The homœopaths call it *Mercurius dulcis*. Their 1x (1-10 gr.) tablet triturates are well made and are very active. They use the 3x in catarrhal inflammations of the ear and Eustachian tubes, and in diarrhea with soreness of the anus. Fumigations of calomel are of great value in membranous croup. *Hydrargyrum cum creta*, U. S. P. (38%), an intestinal antiseptic, cholagogue, and antisyphilitic. Average dose, 4 gr. After saturation with the protoiodide this is a good form of mercury for prolonged administration in syphilis. *Cyanide*, alterative and antiseptic, in use in 1:10,000 to 1:2000

in solution externally, and in 1-10 gr. doses internally. It is similar in action to the bichloride, but is less irritating. Both the regular and homœopathic profession use it in malignant cases of diphtheria, but very small doses should be used. The 3x trituration serves well. *Hydrargyri iodum flavum*, U. S. P., or *Protoiodide*, is used principally in syphilis in the average dose of 1-5 gr. Two things should be remembered with reference to this drug: when purgative effects are produced, it should be conservatively employed, and, as its dose is four times that of the biniodide, it should never be combined with soluble iodides, which convert it into the biniodide. The homœopaths use 1-10 gr. doses when there is a heavy yellow coating upon the tongue, and 1-100 gr. doses (2x) in throat affections with swollen glands. *Hydrargyri iodidum rubrum*, U. S. P., or *Biniodide*. Used in obstinate cases of syphilis in an average dose of 1-20 gr. Highly toxic. The 2x and 3x are of marked value in ulcerated sore throat and diphtheria. *Massa hydrargyri*, U. S. P., or *Blue Mass* (33%), is used principally as a purgative. Average dose, 4 gr., usually in pill form. *Oxide* (Black), or *Hahnemann's soluble mercury*, is not soluble in water or alcohol, and decomposes upon exposure. Dose, $\frac{1}{4}$ to 2 gr., but is unreliable. *Hydrargyri oxidum flavum*, U. S. P., is used externally in 10% ointment in chancres, indolent ulcers, ringworm, and for skin parasites, and in $\frac{1}{2}$ to 1% ointment in ophthalmia. *Hydrargyri oxidum rubrum*, U. S. P., has the same uses and in the same strength. *Subsulphate* is the yellow sulphate or turpeth mineral, and is peculiar in that it possesses emetic properties that render it valuable in croup in doses of $\frac{1}{4}$ gr., repeated at intervals. The adult emetic dose is 2 to 5 gr. The 1x or 2x is valued in cases of dyspnea with rapid respiration and burning in the chest and in

hydrothorax. *Mercurius vivus* is the homœopathic preparation of metallic mercury. The globules are in a very much finer state of subdivision than they are in blue mass or mercury with chalk, the excipient being milk sugar. *Mercurius vivus* is really a very fine pharmaceutical, and, in the ix trituration, is very useful in syphilis and to take the place of blue mass. Ten grains is a full dose for an adult, and represents 1 gr. of minutely comminuted mercury. The higher triturations are mildly alterative, but I believe the homœopaths vastly overdo the administration of mercury in a host of chronic conditions.

Mercurial inunctions are so valuable as to justify a separate paragraph. In my hands, the U. S. P. *Unguentum hydrargyri* has served admirably, but it is important that it be well made and not rancid. Squibb makes it up in suitable form, departing slightly from U. S. P. directions. The oleates of mercury are not sufficiently stable to be relied upon.

In employing homœopathic preparations of insoluble mercury, such as calomel or metallic mercury, it must be remembered that they triturate such substances for many hours by means of electrically operated apparatus, and, grain for grain, the actual drug incorporated is much more active than in similar U. S. P. products. The eclectics make very little use of mercury in any form. It is a drug whose action does not differ in large or small dose except in degree. The recent tendency in the treatment of syphilis has been to use it to saturation, and then maintain the effect with small doses. It is proper to say, however, that mercury is a *tonic alterative in small doses*, and its use for short periods in sore throat and other acute conditions is to be highly commended. It is surprising how quickly many intractable cases of disease yield to small doses of the bichloride or biniodide and old,

obscure chronic cases to mercurial inunctions. "When in doubt give mercury" need not apply exclusively to syphilis.

METHYLTHIONINÆ HYDROCHLORIDUM is what the U. S. P. calls *Methylene Blue*. Tetramethyl-thionine hydrochlorate is the true chemical name, and the matter is mentioned here as a protest against a whole tribe of hybrid synthetic nomenclature in the eighth revision.

In large doses, 2 to 6 gr. in capsules, it is an antiseptic eliminated chiefly by the kidneys, and hence is of value in gonorrhea, cystitis, nephritis, diabetes, and pyelitis.

In small doses, 1-10 to $\frac{1}{2}$ gr., it has some reputation in neuralgias and neurasthenia with a septic or malarial etiology.

MEZEREUM, *Spurge Olive*. Rubefacient and epispastic, used as a stimulant to foul ulcers in the form of ointment. The fluidextract is occasionally used in doses of 5 to 15 ml, well diluted, as an alterative, but it is apt to give rise to very disagreeable symptoms. The tincture made from the fresh bark is of utility in doses of 1 or 2 ml in eczema, shingles, and skin diseases characterized by intense itching, but even that dose must be watched and a smaller dose given if the drug is long continued.

MISTLETOE, *Viscum Album*. Preparations made from the green plant are active, and are dangerously toxic in very large dose, causing convulsions.

In large doses (ec. tr., 5 to 10 ml; tincture, 30 to 60 ml) it is oxytocic, causing intermittent uterine contractions and not markedly influencing the cervix. In labor with weak contractions it is adapted, if, indeed, any drug of this class should be used. In such conditions it is preferable to ergot. Capable authorities have commended it in cardiac hypertrophy with valvular insufficiency.

In small doses (ec. tr., 1 to 2 ℥; 0, 5 to 10 ℥) it is indicated in cerebral congestion occurring in epilepsy, hysteria, and other nervous diseases, and in the paroxysms of tearing pain occurring in neuralgic and rheumatic complaints, and in spinal pains due to uterine disease. It is a useful agent, but its toxicity should be ever kept in mind.

MITCHELLA REPENS, *Partridge Berry, Squaw Vine*. Another uterine regulator used generally entirely out of its indications. *Mitchella is indicated in the last three months of pregnancy, in gradually increasing doses, up to time of labor.* Its value is most positive, and it is more happy in its effects in relieving reflex irritation and maintaining the action of the whole digestive tract during this trying period than is any other drug of its class. Ec. tr. or a good fluidextract, 10 to 60 ℥.

MORPHINA. See Opium.

MOSCHUS, *Musk*. Employed usually in the form of a tincture, in doses of 1 fl, costing about 35 cents per dose for a good article. It is a stimulant antispasmodic of doubtful utility. A 3x trituration smells strong enough and costs 25 cents per ounce, or 2x, 80 cents. Since the homœopaths think more highly of the remedy than we do, it is probable that they get better results with their small doses of this relic of antiquity than we get from our large doses. It is strange that asafetida, another odoriferous drug, should have a similar action as an antispasmodic. In justice, however, it must be said that one or two large doses of musk are sometimes of value in profound prostration. The 2x is valued in spasmodic cough and difficult respiration, but other remedies are so much more sure that musk need rarely be employed.

“MULLEIN OIL” (genuine) is not strictly an oil, but

is a juice extracted from mullein blossoms by compression, after several days' exposure to the sun in a glass jar. It has positive value, used full strength, in the ear in uncomplicated deafness, simple catarrhal earache, and ulcerated ears. Many preparations are unreliable.

MUSCARINE. See *Agaricus*.

MYRICA, *Bayberry Bark*. A stimulant to all mucous surfaces, useful in atonic conditions with increased secretion.

In large doses an emetic, and in moderate doses is somewhat stimulant, but should not be used in acute affections. This bark is worthless unless used in a recent state. Use 8 $\frac{3}{4}$ of the recent bark of the root to 16 fl. $\frac{3}{4}$ of 70% alcohol in making a tincture. Of this, 20 to 30 ml. is a full dose. Employed in atonic diarrhea and dysentery.

In small doses (tincture, as above, 5 ml.; @, 10 ml.) it is useful in atony of the cutaneous vessels, atonic leucorrhea, and some cases of jaundice.

Locally, it is an excellent wash for tender and spongy gums, the sore throat of scarlet fever, and old ulcers.

MYRISTICA, *Nutmeg*. Aromatic and carminative. Average dose, $7\frac{1}{2}$ gr.

MYRRHA, *Myrrh*. This agent is stimulant, expectorant, and emmenagogue, but is seldom employed except in combination with other agents. As an expectorant, its combination with squill is highly useful in chronic bronchitis. Senega and wild cherry coöperate well with it. In indigestion it is combined with gentian, capsicum, and other drugs, and in amenorrhea with iron and aloes. U. S. P. tincture, 5 to 30 ml.

MYRTUS COMMUNIS, *Myrtle*. The @ and lower dilutions are employed in the chest pains of consumptives.

A more active agent is *Myrtus cheken*, the fluidextract being used in considerable dose (f3i) in winter cough and purulent bronchitis. Personally, I do not believe small doses or dilutions of either one of these drugs would be effective. They have not become established in regular medicine.

NAPHTHALENUM, *Naphthalene*. Used internally in 2 gr. doses as an intestinal antiseptic, and in 15 gr. doses, followed by castor oil, as an anthelmintic. In my judgment, bismuth beta-naphtholate or salol are superior to it for internal administration. Its safety in anthelmintic doses is certainly open to question, and it should not be given to children, although small doses (1x to 2x) are asserted to be of value in whooping cough. A 5% ointment is used in parasitic skin diseases.

NATRUM SALTS. See Sodium Salts.

NICKEL BROMIDE. Nerve sedative and hypnotic in doses of 2 to 8 gr. *Metallic nickel* in 2x and 3x trituration is asserted to be of benefit in periodic nervous sick headaches, usually associated with asthenopia and weak digestion.

NICOTIANA TABACUM, *Tobacco*. This agent is too irregular in action to be a safe internal remedy. Squibb's *Nicotine* is a nerve sedative and relaxant of value in strychnine poisoning in doses of 1-64 to 1-20 gr. once or twice a day in solution. One dram of Scotch snuff to 1 3 of vaseline is useful locally in muscular rigidity, incarcerated hernia, and bronchial spasm.

NITROGLYCERINE, *Glonoin*. This agent is official as *Spiritus glycerylis nitratis* (1%). The previous edition called it "Glonoin," as do the homeopaths, who gave it practical introduction into therapeutics. Physicians ac-

customed to tablets of this volatile agent should be careful with the always active spirit. Tablets should not be depended upon unless very recently made, but coated pills retain it fairly well. I dilute the spirit with 9 parts of glycerine and have it ready for instant use hypodermically or by the mouth, and if this solution happens to be spilled it does not volatilize or the alcohol evaporate and an explosive residue remain. Tolerance to nitroglycerine is readily established, and hence the dose must be run up gradually. Merck's adonidin adequately takes its place when continuous administration establishes tolerance to glonoin.

In large doses (1 or 2 ℥ U. S. P. spirit) it is an anti-spasmodic, vaso-dilating heart stimulant of primary importance in angina pectoris, acute cerebral anemia, spasmodic asthma, poisoning by carburetted hydrogen, illuminating gas, and opium poisoning with uremic symptoms.

In moderate doses ($\frac{1}{4}$ to $\frac{1}{2}$ ℥ of spirit) it relieves markedly anemic headaches, many forms of heart lesions, and some functional disturbances, and in albuminuria is of considerable service.

In small doses (third or fourth dilution) it is depended upon by homœopathic physicians in congestive headaches and the pulsating headache of persons working in great heat or under artificial light. It is to be remembered that the \textcircled{O} is ten times the strength of the U. S. P. spirit, which corresponds to a ix dilution. The small dose is not always to be depended upon, but has distinct utility in some cases.

NUX VOMICA. For the discussion of this important drug in detail see larger text-book.

In large doses (2 to 5 gr.; extract, $\frac{1}{2}$ gr.; f.e., 4 ℥; U. S. P. tincture, 20 ℥) it is a powerful respiratory and

nerve stimulant, useful in poisoning by narcotics, acute heart failure, marked nervous prostration, many cases of subnormal temperature, flaccid paralyses without central irritation, surgical shock, and in the treatment of dipsomania.

Strychnine or its sulphate is frequently to be preferred to nux vomica in these conditions, since it is quicker in action and suitable for hypodermic injection without elaborate preparation of sterile solutions. Dose, 1-30 to 1-15 gr.

In moderate doses (1 to 2 gr.; extract, $\frac{1}{8}$ to $\frac{1}{4}$ gr.; f.e., 1 to $1\frac{1}{2}$ m; tr., 6 to 10 m; strychnine, 1-60 to 1-40 gr.) it is indicated in many conditions demanding a stimulant tonic to the nervous and circulatory systems in convalescence, sexual exhaustion, and impotence, and in acute digestive disturbances.

In small doses (tr., 1 to 3 m, or the first dilution) it is adapted to two classes of cases. The first class is the patient with a sallow skin, especially around the mouth, a dead-looking more or less yellow conjunctiva, pasty yellow coat upon the tongue, abdominal fulness and torpor, and cramp at times in the umbilical region. The second class is the patient who is thin, nervous, and irritable, living under a strain, with business cares and long hours, uses tobacco and stimulants, eats heavy food, loses sleep, and develops nervous dyspepsia, portal congestion, and more or less hypersensitiveness. The 2x tablet triturates act well in these cases. Small doses of nux vomica are highly useful, but minute doses of strychnine do not do so well, since its action is largely expended upon the spinal cord and not upon the viscera.

CENANTHE CROCATA, *Water Dropwort*, is allied to our American five-leaved water hemlock (a species of *Cenanthus*). The true water hemlock is *cicuta virosa* (q. v.).

All these plants have similar toxic influences and have no established place in medicine, although used somewhat in sectarian practice.

OILS, *Amygdalæ Amarae*, is active owing to contained hydrocyanic acid. Dose, $\frac{1}{2}$ ℥. *Amygdalæ dulcis*, or the U. S. P. "*Amygdala expressum*," as made from either sweet or bitter almonds, is laxative, emollient, and nutrient. *Anisi*, carminative and antiseptic. Average dose, 3 ℥. *Benzaldehyde* is a synthetic substance resembling in taste the bitter almond, but is not poisonous. *Betulae*, or sweet birch, has properties similar to wintergreen. Average dose, 15 ℥. *Cadimum*, or oil of juniper tar, used externally in chronic skin diseases. Its internal use is not to be commended. *Cajuput*. See under its own heading. *Cari*, carminative in 1 to 5 ℥ doses. *Oleum carbolatum*, N. F. (5%), in cottonseed oil. *Caryophylli*, antiseptic in 3 ℥ doses. Locally, in carious teeth. *Chenopodii*, anthelmintic. Average dose, 3 ℥. *Ol. Cinnamomi*, U. S. P., is oil of cassia, valuable as a flavor but of little use therapeutically. See *Cinnamomum Zeylanicum*. *Copaibæ*, employed in genito-urinary diseases. Average dose, 8 ℥. See *Copaiba*. *Erigerontis*. See *Erigeron*. *Eucalypti*. See *Eucalyptus*. *Fæniculi*, carminative and corrigent in 1 to 5 ℥ doses. *Gaultheriae*. See *Gaultheria*. *Hedeoma*, emmenagogue and carminative. Average dose, 3 ℥. *Juniperi*. See *Juniperus*. *Lavandule florum*, rarely used internally as a stimulant in 1 to 5 ℥ doses. *Menthæ piperitæ*. See *Peppermint*. *Menthæ viridis*, carminative, antiseptic, and alterative. Average dose, 3 ℥. *Morrhuæ*, alterative, tonic, and nutrient. Average dose, 4 fʒ. *Olivæ* is usually given in 1 fʒ doses, but in hepatic colic in 3 to 6 times this amount. In the process of digestion it is thought to form a fat-free soap which, when absorbed, is solvent to gall-stones. *Picis liquidæ*,

used externally in skin diseases. *Ricini*, cathartic in 4 to 8 fʒ doses. *Sabinæ*, emmenagogue. Average dose, 1 ℥ in pill or capsule. *Santali*, genito-urinary antiseptic. Average dose, 8 ℥ in capsule or emulsion. *Sinapis volatile*, used as an ingredient of stimulating external applications. There is no occasion whatever to employ it internally, though its average dose is given as $\frac{1}{8}$ ℥, diluted. *Terebinthinæ rectificatum* is the only form of turpentine that should be used internally. Used principally in U. S. *P. Emulsum olei terebinthinæ* (15%). Average dose, 1 fʒ as a diuretic and antiseptic in retention of urine, dysentery, etc. Used in doses four to six times this size it is given in phosphorus poisoning and to expel tape-worm. *Thymi*, carminative, antiseptic, and diffusible stimulant. Average dose, 3 ℥. This agent has recently been suggested for whooping cough. Externally, it is rubefacient and antipruritic. *Tiglii*, a drastic cathartic, to be used only with the greatest of care, in doses of 1 or, occasionally, 2 ℥. Powerfully rubefacient externally.

OLEATES. These ointments have the advantage of ready absorption, but the disadvantage of not keeping very well. They should be purchased in small quantities of reputable makers, and kept well protected.

Aconitine (Squibb) (2%). To be used only upon the unbroken surface of the skin. An anodyne in neuralgia and painful joints. *Atropinæ*, U. S. P. (2%), used externally, principally in whooping cough. *Cocainæ*, U. S. P. (5%), a local anesthetic. *Hydrargyri*, U. S. P. (25% yellow mercuric oxide), used in scrofulous and syphilitic inflammations. *Quininæ*, U. S. P. (25%), antiperiodic inunction. *Veratrinæ*, U. S. P. (2%), from veratrine alkaloid derived from the seed of *Asagræa officinalis*, a toxic cardiac depressant. Rubefacient and anodyne, of use in sprains and scrofulous joints, with care.

OPIUM. This drug is so ably treated in the writings of all schools of medicine and is so well known that little need be said here. Its preparations are so numerous that we will not detail them.

The employment of the alkaloids derived from opium is more marked by abuse than by use, both in and outside of the medical profession, and the hypodermic syringe has become a public menace. This little book has been written in the intervals between patients, during office hours, and the notes were stained by drugs and soiled by wet fingers many a time, but no "dope" has left its stain there, and the too ready "hypo." of the laboratory and library therapist has never been a paperweight or bookmark during its preparation. In sixteen years' fairly active practice, the present author has not given fifty hypodermic injections of morphine aside from surgical cases and emergency work. Any physician who takes the trouble to learn the therapeutics of pain need use morphine and enslaving drugs very little indeed, but the therapeutic nihilist and the blind searcher for mere symptoms and the would-be surgeon who makes a bluff at therapeutics until he can make surgery pay, all incline to use too much morphine, because they really do not know what else to do. On the other hand, opium itself is a most useful drug in a host of cases, and we need to learn how to handle it in large and small doses as intelligently as we do digitalis, ergot, or ipecac, and not become imbued with the idea that its alkaloids are alone of use. When we do use the alkaloids, it is well to remember that a hypodermic tablet dissolved in a tablespoonful of hot water and given by mouth is usually better practice than the hypodermic injection of the same thing; that codeine is vastly safer than heroin or dionin and usually more effective; that apomorphine should never be given to children under any circumstances; that large doses should not be given to a

nursing mother; that very young babes should rarely have these alkaloids in any dose; that we should be careful and not obscure important symptoms necessary to recognize in time to save life, since these alkaloids are very liable to obscure them; that they have well-marked contraindications, and that a patient with flushed face, contracted pupils, a dry and hot skin, a coated tongue and inactive excretion seldom tolerates them in large dose; that they have no place in cough mixtures for young children; that drug habits are readily formed, and that we have no right to give these agents to others in conditions in which we would not administer them to our own dear and near ones.

Opium in large doses ($1\frac{1}{2}$ to 2 gr.; tr., 10 to 20 m; Dover's Powder, 15 gr.) is indicated in spasmodic pain of bowels, bladder, uterus, common bile duct, ureters, and urethra when pain is not too acute, or to follow an initial dose of morphine when acute; in cholera morbus, laudanum, or opium per rectum; peritonitis, until sharp pain is relieved; to check excessive secretion in diarrhea, and in many surgical conditions. When sleeplessness is due to pain, opium in grain doses is indicated, and 2 gr. doses may frequently be required.

Morphine in large doses ($\frac{1}{4}$ gr. hypodermically or by mouth, as indicated by conditions or urgency) is indicated in wakefulness, with excessive muscular action in acute spasmodic diseases, such as chorea and epidemic cerebro-spinal meningitis. In traumatic tetanus it should be injected into the muscles. Spasmodic asthma demands fairly large doses at times, as do violent cramps. Acute neuralgic and sciatic pain and the pain and shock of traumatism demand full doses, often hypodermically. Puerperal convulsions may demand doses as high as $\frac{1}{2}$ gr.

Opium in moderate doses ($\frac{1}{2}$ to 1 gr.; tr., 5 to 10 m;

Dover's Powder, 5 to 8 gr.) is indicated in many cases of diarrhea and for a diaphoretic effect. The moderate dose, especially of Dover's Powder, is indicated. Moderate doses in suppositories are applicable in painful pelvic, rectal, and genito-urinary troubles.

Morphine in moderate doses ($\frac{1}{8}$ gr.) is applicable in the less acute indications noted under large doses, and in cardiac dyspnea and angina pectoris, as well as in rectal tenesmus and threatened miscarriage.

Opium in small doses ($\frac{1}{4}$ to 1-3 gr.; tr., 2 to 4 m) is a stimulant to the nervous system and tends to prevent exhaustion, and is quite useful in typhoid fever with nervous exhaustion. Give by rectum. Similarly used in pneumonia and pleurisy, it frequently does good. There are a good many cases of spasmodic contraction of the intestines that result in constipation. Small doses of opium following oil or a saline relieve promptly.

Morphine in small doses (1-20 gr.) is of value in reflex vomiting and in dry, spasmodic cough. Codeine is frequently to be preferred in cough, but in doses of $\frac{1}{4}$ gr. or more. These small doses of morphine hypodermically are of value in melancholia marked by loss of appetite and muscular weakness.

Opium in minute doses, as employed in the 3x by homeopaths, is indicated in sluggish conditions of the nervous system with stupid sleep, stertorous breathing, relaxed jaw, and dark, suffused face. There is no doubt that the stimulating effects of opium could be secured by these minute doses if very frequently repeated, but it impresses me that such symptoms involve a study of the underlying pathology and the use of very much more direct remedies to meet the state of the case. (Do not forget the difference between the drop and minim of Tr. Opii.)

OXGALL, *Fel Bovis*, in purified form, is employed in intestinal indigestion. The U. S. P. recognizes *Fel bovis purificatum*, and it is used in pills or capsules in 5 to 10 gr. doses.

PÆONIA is employed in 2x and 3x in rectal irritation and itching, as well as in fissures and hemorrhoids. It is asserted to relieve the pain, but is not used to the exclusion of local treatment. Large doses cause vertigo and diarrhea.

PALLADIUM. Triturations of this metal are employed in ovarian diseases associated with mental disturbances. If it is really of therapeutic value, its action is probably akin to that of platinum.

PANCREATINUM. In a test tube this agent is amylo-lytic, proteolytic, and emulsifiant. In the stomach it is destroyed in the presence of pepsin or over 0.5% of hydrochloric acid; hence it should be administered in the intervals between gastric activity in order to reach the duodenum, where it possesses marked digestive powers. Do not administer in combination with other digestive agents, acids, or alcohol. Dose, 5 to 15 gr.

PAPAYA. Several proprietary digestants, among which are "Papain," "Papoid," "Caroid," and "Papaotin," are prepared from the fruit of the carica papaya, which contains ferments and nitrogenous principles rather remarkable in plant life. These proprietaries are of considerable value, but they do not digest everything, as is claimed by some enthusiasts, and they are very feebly active in an acid medium. In a weak, alkaline solution they are powerfully digestant, taking the place of pancreatin more than that of pepsin, but these agents are not without utility in gastric digestion, and, in their several combinations, are of frequent value in dyspepsia. Unfortunately,

the high price has induced some so-called pharmaceutic houses to market tablets only pretending to contain this agent. It is best to buy direct from the makers of these articles under their trade names as herein given.

In my own experience, they possess a peculiar value in dissolving and digesting mucus that I take advantage of in cases of gastric ulcer, gastric catarrh, intestinal troubles with an excess of mucus, and where intestinal parasites lodge in mucous secretions. These agents clear away the mucus and permit the local action upon mucous membranes or the absorption of remedies administered. Dose, 2 to 5 gr. with sodium bicarbonate. A 5% solution in equal parts of glycerine and water dissolves false membrane in diphtheria and croup.

PARALDEHYDUM. Hypnotic and antispasmodic. Of slight use in nervous insomnia and in the treatment of alcoholism and insanity. The average dose is 30 mL , well diluted, in an elixir. An impure article may contain fusel-oil derivatives, but a well-made paraldehyde is moderately safe in use.

PAREIRA. An alterative diuretic of value in urinary troubles, dropsy, and rheumatism. Large doses are laxative. This agent markedly relieves gleet and chronic cystitis. (F.e., 30 to 60 mL .)

PARTHENIUM, Bitter Broom. Small doses of a tincture are used in Cuba as a remedy for fevers, following the administration of quinine. It is said to favorably influence Cheyne-Stokes respiration. Excessive doses cause headache and disordered vision.

PASSIFLORA INCARNATA, Passion Flower. The physiologic action of this remedy has not been well studied, but animals eating of it in large quantities suffer from spasm and paralysis.

In moderate doses in man it is classed as a narcotic and antispasmodic. It has been exploited in proprietary circles, and is overstated in the literature issued. I have made large use of the agent, and find the fluidextracts to vary. The ℗ is excellent, but too weak for a feeble drug like passiflora. The ec. tr. is made of the root and stem stalks, and is claimed to be more potent than fluidextracts, but I believe some of them equal it in strength.

As an antispasmodic it is of more value than as a narcotic. A few cases of tetanus are recorded in which large doses were effective. It seems to cure tetanus in horses very promptly, but is not nearly so successful in man, and must be given in tablespoonful doses of the fluidextract. The spasms of meningitis yield to it more readily, while in epilepsy it seems to have an effect in reducing the frequency of the paroxysms, but large doses must be given. In the convulsions of children it is quite a reliable drug in doses of 10 to 15 ℥ of the fluidextract.

As a narcotic it produces normal sleep, and the patient can be readily aroused. No disagreeable symptoms follow its use, but it must be steadily borne in mind that passiflora does not relieve pain and is utterly worthless as a hypnotic in insomnia with flushed face and cerebral congestion. Bromides are demanded in this condition. On the other hand, in *asthenic* insomnia due to exhaustion and depressing fevers, in insomnia due to functional nerve disturbances, neuroses without pain, and in insomnia of infants and the aged, it is a useful and entirely harmless drug. It acts nicely with children. Small doses are of no value.

PELLETIERINÆ. See Granatum.

PENTHORUM, *Virginia Stonecrop*. The f.e. or ec. tr. in 5 to 20 ℥ doses increases the functional activity of the

stomach. The homœopaths use smaller doses in chronic coryza.

PEPO. See Cucurbita.

PEPPERMINT, *Mentha Piperta*. The warm infusion is diaphoretic, while the oil is antiseptic and anesthetic, and may be given in 2 to 5 ml doses in fermenting stomach. Add the oil to a small quantity of glycerine, then incorporate with a quantity of hot water and administer. Locally, the oil serves somewhat the same purposes as the solutions in oil of the more active menthol, which is to be preferred. The oil is a good application to aching carious teeth, but a better plan is to first apply "Echafolta" and follow with equal parts plantago (q. v.) and oil of peppermint.

PEPSINUM. An active proteolytic agent employed in several forms of dyspepsia and in peptonizing milk. In cases of malnutrition in infants, pepsin in small doses triturated with milk-sugar is often of most direct benefit. It should also be remembered that following shock or severe disease a deficiency of pepsin in the gastric secretion is oftentimes a marked factor in the case. It combines rationally with hydrochloric acid and the bitter tonics. Dose, 3 to 10 gr. A few makers extract direct from the hog's stomach the pepsin therein. These essences of pepsin are probably the most active form of the drug, and are utterly free of decomposition products.

PETROSELINUM, *Parsley*. The ♀ and first dilution are employed in urethral irritation with constant desire to micturate. It is fairly efficient.

PHENACETIN, *Acetphenetidinum, U. S. P.* This agent is incompatible with iodine, salicylic acid, and oxidizing agents, and liquefies when triturated with carbolic acid or chloral hydrate. The patent upon it has recently expired, and it can now be procured at a reasonable price.

This drug is probably the safest of its class. While it induces the formation of met-hemoglobin and may cause cyanosis, it does not have the awful record of mortality incident to the unwise use of other coal-tar derivatives. There is no scientific basis for a sweeping condemnation of these synthetics, but it is well to be upon the safe side and employ this comparatively safe chemical instead of acetanilid.

Phenacetin is of value in the initial stages of sthenic fevers, especially when associated with pain. It markedly reduces fever, but less decidedly relieves pain. Its stimulation of secretion renders it a valuable drug with which to prepare the system for the exhibition of quinine. Its average dose is $7\frac{1}{2}$ gr., but 10 gr. may be given as an antipyretic and 12 gr. may be demanded for its analgesic effects. Never exceed 3 gr. with children, and do not give to infants at all.

PHENOL, Carbolic Acid. Antiseptic, antipyretic, and caustic. Used internally in doses of 1-6 to $\frac{1}{2}$ gr. in pill or emulsion, in fermentative dyspepsia, and obstinate vomiting. Locally, full strength as caustic, and 1 part to 500 to 1 in 1000 as a wash or injection. In ointments, usually 5%. This agent is being largely displaced by other antiseptics, but should not be forgotten as a safe caustic possessing local anesthetic properties.

PHENYL SALICYLAS. See Salol.

PHOSPHORUS. This is a neglected but valuable remedy. Its great affinity for oxygen makes it a little difficult of administration. Its alcoholic solutions should not be dispensed in water, the contained air of which soon reduces it to phosphoric acid, and thus the physicians who administer it in this way fail to get results. The *Liquor phosphori, N. F.*, or "Thompson's Solution," contains

1-24 gr. to a fl³, and in doses of 10 to 20 ml., diluted as administered, is a satisfactory preparation. The ec. tr. and @ are of about the same order, but are saturated alcoholic solutions, and may be given in doses not exceeding 5 ml. The *Pilulae phosphori*, U. S. P., contain 1-100 gr., and they are well constructed chemically and can be depended upon.

In large doses (2 pills; Liq. Phosphori, 20 to 30 drops) phosphorus is seldom demanded. Large doses should be given with great care, but when a powerful general stimulant and nerve tonic are demanded these doses give increased strength. Acute sexual debility may justify large doses. In paralytic conditions due to functional derangements of the cord, in long-standing cases of neuralgia, and in some cases of epilepsy 1-60 gr. doses may be given.

In moderate doses (1 pill; Liq., 10 to 15 drops) it is a remedy in nervous exhaustion with the accompanying occipital headache and insomnia, chronic sexual debility, the diseases of senility, glandular diseases marked by debility, and in tubercular states.

In small doses (Liquor, 1 to 3 drops; first decimal dilution, 1 to 3 drops; and in children and chronic cases, the second dilution). The ec. tr. or any saturated solution in alcohol may be used in glycerine or to saturate sugar disks, but these disks should be kept well corked. Practically, the first dilution, given to the patient with directions to take 1 to 3 drops in a little water at a dose, serves well. We must give the homeopaths credit for developing a good thing in these indications for phosphorus in small doses, as they are really very effective. In these doses phosphorus overcomes pulmonary engorgement, relieving the cough of tuberculosis and favorably influencing the dyspnea and diarrhea. In pneumonia and

bronchitis with engorgement and muco-purulent expectoration and in chronic laryngitis and the sequelæ of pneumonia it is highly useful.

Fatty degenerations are directly helped by small doses, and especially such changes in the heart, brain, and spinal cord. In cases of malignant jaundice, associated with fatty degeneration of the liver, it sometimes aids in the cure.

A whole class of degenerative nerve changes responds to small doses of phosphorus, such as myelitic paraplegia from excessive venery, asthenic amaurosis following nerve lesions or defects, some cases of dementia and paralysis agitans, and prostration of the ganglionic system with impaired cerebration.

Certain gastro-enteric states marked by debility are aided by small doses. A painful, irritable stomach, associated with deficient pancreatic digestion and painless but debilitating diarrhea, may be helped, and the whole train of symptoms disappear under a nerve-tonic course of phosphorus.

PHYSOSTIGMA, Calabar Bean. This highly toxic drug has been employed in tetanus, tonic convulsions, severe neuralgia, phantom tumors, muscular rheumatism, and in strychnia poisoning, as well as in spasmodic conditions generally. Dose, extract, 1-10 to $\frac{1}{4}$ gr., the average being $\frac{1}{8}$ gr. The average dose of the tincture is 15 ml; ec. tr., 1 to 3 ml. See under "Eserine" also. Its average dose is 1-64 gr., and the maximum 1-30 gr. Before using this drug in the doses and for the indications given above, it would be well to study the physiologic action as related to the case in hand. It is a powerful agent, both for good and for harm, but *usually* for the latter.

In small doses (extract, 1-20 gr.; tr., 3 to 5 ml; ec. tr., $\frac{1}{4}$ ml) it is employed in inactivity of the bowels with

flatulence and muscular weakness, paretic diarrhea, diseases of the nerve centres, ocular paralysis, and writers' cramp. It has been commended in many other conditions by sectarian physicians. In general, it may be said that its influence in small doses is too uncertain to be depended upon, and it is little used in practice, although commended in the books. Eserine is highly useful in ophthalmic practice. The U. S. P. *Physostigminæ salicylas* or *sulphas* are the salts commonly used, and are applied to the eye in 0.2 to 0.5% solution.

PHYTOLACCA, *Poke Root*. Some years ago an alternative mixture compounded from the *fresh juices* of stillingia, sarsaparilla, lappa, xanthoxylum, and phytolacca was suggested by Dr. J. Marion Sims, and has been used largely in syphilis with a considerable degree of satisfaction. The same combination made from fluidextracts has disappointed. It is a well-known illustration of the advantages of fresh plant pharmaceutics. The drug now under consideration is one I wish I had it in my power to adequately present in such a light as to impress not merely the value of phytolacca, but to use as an illustration of the radical differences between green and dried plants in the making of tinctures and fluidextracts. As a matter of fact, no fluidextract of phytolacca is of any particular therapeutic value unless made of the recent root dug in the early fall. A trial of the matter will soon demonstrate this to the satisfaction of any observing man. This is a very useful drug fallen into disuse, like many other good things, on account of vitally defective pharmacy.

In excessive doses phytolacca is cathartic and emetic, and, in very large doses, a narcotic poison, one-half ounce of the berries or root in a fresh state having produced fatal results.

In large doses (ec. tr. or green root, f.e., 3 to 6 ℥, or 10 ℥, if for only a few doses) phytolacca might be likened somewhat to the iodides in action. While not taking their place, certainly it works in harmony with them, and is most valuable in following the iodides. It is employed in syphilis, scrofulous affections, ulcerations, and chronic rheumatism. It does not have the power of the iodides over effusions and plastic exudates, but in lymphatic and glandular involvements and to eliminate freely circulating toxines it is of equal value. Its known value in rheumatism may be somewhat due to its narcotic action, and in those cases apparently not due to uric acid rather large doses of phytolacca are demanded and seem to be well tolerated. In acute rheumatism it does not do so well. In ulcers and ulcerating skin diseases it is a most excellent agent, but must be given in full doses. It seems to have a direct and positive effect upon ulcerations of all mucous surfaces and the outlets of the body. It is not at all probable that it directly opposes the toxic element of syphilis, but it does oppose the suppurative tendencies of the disease and thus limits the development of these toxic elements. Phytolacca is not the only vegetable drug of value in syphilis. It does not eliminate or even antidote these elements, but it appears to clean the field and thus inhibit development. Mercury and the iodides seem to act as antidotes (if indeed there be an antidote). Phytolacca is not very markedly an eliminating agent, and hence is wisely combined with other alteratives and eliminating agents, although, in large doses, it is somewhat diuretic. Syphilitic sciatica, gonorrhœal rheumatism, vénereal buboes, quinsy, suppurative sore throat, follicular tonsilitis, orchitis, rheumatic periostitis, and diphtheria are all more or less amenable to full doses, not, of course, to the neglect of other indi-

cated measures. In diphtheria, for instance, it is a mere adjuvant to the direct remedies used.

In moderate doses (ec. tr. or green, f.e., 1 to 3 ℥) it manifests its primary action, which is upon the glandular and lymphatic structures. It is the best agent in the *materia medica* for non-suppurative inflammation of the breasts in nursing women. Give small doses combined with aconite at frequent intervals, and apply the cerate or solution externally and support breast with adhesive strapping. Use equal parts ec. tr. and heated glycerine and apply upon absorbent lint, or else use the phytolacca cerate, made in 25% strength of the green root by homœopathic pharmacies. This cerate is of value in irritable breasts occurring before and during the menses. Minute doses of phytolacca are not effective.

In domestic practice the poke berries are used in chronic rheumatism. The usual formula is 2 3 of the fresh berries macerated in 1 pint of Holland gin. The dose is from 1 teaspoonful to a tablespoonful, not too frequently repeated. It is quite effective. The berries are also used to reduce fat. Procure the berries, after having been slightly frosted, and express the juice. Filter this and add about 20% of glycerine to preserve, or use less glycerine and a little salicylic acid. Commence with 5 ℥ doses and increase carefully.

PILOCARPUS, Jaborandi. This is a drug presenting a whole train of difficulties to the honest pharmaceutic chemist. There are twenty-one varieties of pilocarpus leaves in trade, and of these species only two conform to official requirements. The other leaves are used. Comment upon the cheap fluidextracts is unnecessary. An honestly made assayed fluidextract is prepared by several houses, and is thoroughly representative. The ec. tr. is

made entirely from *pilocarpus microphyllus*, the eclectics claiming it to be much superior to the other official leaf, *pilocarpus jaborandi*. As a matter of fact, the chemistry of *pilocarpus* is so involved that it is a difficult matter to pass upon this question or to assign any therapeutic place to the several alkaloids derived from it, with the exception of the official pilocarpine salts. The average dose of the U. S. P. assayed fluidextract is given as 30 m_l, which I consider too high. However, it must be said that a trace of jaborine exists in most fluidextracts, and official standards do not require its removal. This alkaloid is antagonistic to pilocarpine, and this renders the large dose necessary. Some chemists claim that pilocarpine is partially converted into jaborine by heating. If this is true, a fluidextract should be made absolutely without the aid of heat. Whatever views may be entertained as to the eclectic idea of rejecting *pilocarpus jaborandi*, the fact remains that their eclectic tincture or fluidextracts of *pilocarpus microphyllus* should be given in less dose than the other preparations. The maximum single dose of the ec. tr. is 1 3, and the eclectics consider this dangerous. The full dose is 20 to 30 m_l. My own idea is that it contains very little jaborine, and hence the small dose. The U. S. P. requirement of 0.5% total alkaloids is very unsatisfactory as an assay standard in view of the involved alkaloidal chemistry.

In large doses some practitioners employ 1 3 of the eclectic tincture or 2 of the fluidextract at one single dose to establish crisis in severe febrile diseases where a fatal outcome is threatening. It is claimed that under such circumstances it equalizes the circulation and relieves internal congestion. In some cases a hypodermic of $\frac{1}{2}$ gr. of pilocarpine hydrochlorate is preferable. The maximum single dose of this salt is 2-3 gr. This large dose should

never be given in ordinary ailments nor in threatened heart failure, but in semi-moribund cases it does not react upon the skin to any great extent. In proportion to age, nearly as large doses are now given in diphtheria with impending suffocation from accumulation of dry membrane, but in very young infants it does not do very well. In general, it may be said that when we want the action of large doses of pilocarpine, it is best to employ the alkaloidal salts, since no jaborine is to be contended with. The average dose is 1-5 gr., but $\frac{1}{4}$ to 1-3 gr. may be given in robust patients with sthenic disease. The physician should take atropine and brandy along, and remain with the patient for an hour after administering pilocarpine. These doses are indicated in some acute febrile and inflammatory conditions with rigor and a bounding pulse, and sometimes as a sedative to the heart in other conditions. It is much employed in dropsy when the heart is not weakened. It appears to be of distinct value in markedly sthenic puerperal eclampsia and uremic convulsions. If in parturition the skin is hot and dry, the os very rigid, the pains severe but ineffective, and the pulse bounding, a full dose of pilocarpus gives excellent results. Large doses are sometimes given in croup. Pilocarpus antidotes atropine poisoning, and, to some extent, the venom of snakes, rabid animals, and the ptomaines of decomposed fish and meats, but it is not employed to the exclusion of other indicated remedies.

In moderate doses (f.e., 15 ml; ec. tr., 6 to 8 ml; pilocarpine, $\frac{1}{8}$ gr.) it is of value in inflammatory rheumatism, in inflammation of the lungs and pleura with exudation, stridulous laryngitis (dose reduced to suit age), laryngeal diphtheria, bronchial asthma, acute orchitis and ovaritis, sthenic erysipelas, lumbago, pleurodynia, serous iritis and rheumatic iritis, simple glaucoma, retinal hem-

orrhage, chorio-retinitis, interstitial keratitis, and in effusion into the labyrinth of the middle ear.

In small doses its action upon the skin is sufficient to aid in exanthematous fevers (ec. tr., $\frac{1}{2}$ to 2 m). Quite small doses are of value in sthenic fevers, especially where there is dry, bronchial irritation with imperfect secretion (ec. tr., 2 to 4 m). Where there is relaxation of the cutaneous vessels, due to tuberculosis and other debilitating diseases and causing excessive sweating, the little 1-100 gr. granules of pilocarpine give relief. They are also useful in mumps, the salivation of pregnancy, scanty urination, edema from Bright's disease, laryngeal and pulmonic edema. These little granules can be frequently repeated. As an active galactagogue, small but larger doses than these are required.

Used externally, pilocarpine is directed in 1 to 2% aqueous solution as a collyrium to contract the pupil. The alkaloid, instead of its salts, is used. Fluidextract of pilocarpus is a constituent of some hair tonics. Atropine in 1-100 gr. dose antagonizes or antidotes 1-6 gr. pilocarpine. Homœopathic physicians employ the third dilution of pilocarpus in exophthalmic goitre with asserted benefit.

PILULÆ, U. S. P. Aloes (2 gr.), 1 to 3 pills. *Aloes et ferri* (1 1-13 gr. each, a laxative emmenagogue in doses of 1 to 4 pills. *Aloes et mastiches* (aloes, about 2 gr.), 1 to 3 pills. *Aloes et myrrhæ* (aloes, 2 gr., myrrh, 1 gr.), a laxative carminative in doses of 1 to 3 pills. *Asafœtidæ* (3 gr.), 1 to 3 pills. *Cathartice compositæ* (co. ext. colocynth, $1\frac{1}{4}$ gr.; calomel, 1 gr.; res. jalap, 1-3 gr.; gamboge, $\frac{1}{4}$ gr.), 1 to 3 pills. *Cathartice vegetabilis* (co. ext. colocynth, 1 gr.; ext. hyoscyamus, $\frac{1}{2}$ gr.; ext. leptandra, $\frac{1}{4}$ gr.; res. jalap, 1-3 gr.; res. podoph., $\frac{1}{4}$ gr.), 1 to 3 pills. *Ferri carbonatis*, or "Blaud's Pills" (1 gr.),

1 to 3 pills. *Ferri iodidi* (1 gr.), 1 to 3 pills. *Laxativa compositæ* (aloin, 1-5 gr.; strychn., 1-130 gr.; ext. bellad. fol., $\frac{1}{8}$ gr.; ipecac, 1-16 gr.), 1 to 3 pills. *Opii* (1 gr.), 1 to 2 pills. *Phosphori* (1-100 gr.); dose, 1 pill, rarely 2. *Podophylli belladonnae et capsici* (podoph. res., $\frac{1}{4}$ gr.; ext. bellad. fol., $\frac{1}{8}$ gr.; capsicum, $\frac{1}{2}$ gr.), 1 to 2 pills, rarely 2. *Rhei compositæ* (rhei, 2 gr.; aloes, 1 $\frac{1}{2}$ gr.; myrrh, 1 gr.), 1 to 3 pills.

PINEAPPLE. The fresh juice contains a digestive ferment known as *Bromelin* and acting similarly to caroid. The juice itself is of some value as a local application to the diphtheritic exudate as a solvent.

PIPERAZINE. An antilithic. Dose, 15 to 30 gr. per day, in water. The chemical is hard to keep, but the pharmacist can put it up in solution, freshly made, every two or three days. It is a most excellent agent, but rather expensive.

PIPERINA. A feebly basic substance derived from various species of pepper. It should be administered in pill form. In large doses (6 to 8 gr.) it is an antiperiodic. In small doses ($\frac{1}{2}$ to 1 gr.) it is a stomachic and carminative.

PIX LIQUIDA, Tar. Antiseptic, anticatarrhal, antispasmodic. *Glyceritum picis liquidae*, N. F., is a valuable expectorant in teaspoonful doses. It is a good vehicle for other agents acting in harmony with it. The syrup is similar, but the sugar therein is apt to disorder digestion. *Vinum picis* is another N. F. preparation, very much stronger in tar than the foregoing. It is a stimulating expectorant in teaspoonful doses. The oil of tar may be taken in 3 ml doses upon block sugar. *Unguentum picis liquidae* (50%) is used in scabby eruptions, psoriasis, tinea capitis, and other skin troubles.

PLANTAGO MAJOR, *Plantain Weed, Ribwort*. This is a common pest in old lawns and by roadsides, and is a peculiar weed esteemed in domestic practice. A pulp of the crushed leaves is applied to insect bites, poisoned wounds, and painful sores. My experience in country practice leads me to remark that it is really of very considerable value. The homœopathic cerate of plantago is made of 25% fresh leaves, and is recommended by them in many forms of poisonous and malignant inflammation, phlegmonous erysipelas, indolent ulcers, ulcerations of the rectum and os uteri, chilblains in the inflamed stage, and the small boils that develop in the nose. The ec. tr. plantago is esteemed as a remedy in earache and toothache. It is applied full strength upon pledgets of cotton. Internally (ec. tr., 1 to 10 M), it has some reputation in neuralgias due to reflex irritation from the ears and teeth. Small doses are asserted to cure nocturnal enuresis due to relaxed sphincter vesicæ. It is "the harmless remedy for bed-wetting in children" advertised by some mail-order "specialists."

PLASTERS, *Emplastrum Adhæsivum*, is 2% rubber, 2% petrolatum, and 96% lead plaster. *Aromaticum*, N. F., is a good, ready-made spice plaster. *Belladonnæ* is 30% ext. bellad. fol. and 70% adhesive plaster. *Bryonia* and *Rhus Tox.* is a homœopathic formula used to relieve pain of rheumatism, lumbago, and sciatica. *Capsici* contains 4 gr. oleoresin capsicum in 36 square inch plaster. *Hydrargyri* is 30% mercury with lanoline and lead plaster. *Opii* is 6% extract opium. *Plumbi* or *Diachylon* plaster is now made of lead acetate and soap. *Saponis* is 10% soap and 90% lead plaster.

PLATINA. The 3x triturations are employed in sexual, nervous, and mental diseases, especially where there are paralytic tendencies with anesthesia, and in nympho-

mania and satyriasis. The precipitated metal, and not a salt, is used. Since the heavier metals generally possess therapeutic properties, it is reasonable to suppose platina should not be an exception. It is asserted that it is antagonistic to lead, and is of value in chronic lead poisoning.

PLUMBUM, *Lead Acetate*, used externally in conjunctivitis and gonorrhea (1-5 to 1% solution), and sometimes in the diarrhea of tuberculosis in 1 or 2 gr. doses. The 1x to 3x are used in enteralgia and muscular and intestinal cramps. The *Liq. plumbi subacetatis* is used in moist eczema, pruritus, and other affections. *Iodidum*, used externally, in 10 to 20% ointments, in indolent ulcers, swollen glands, etc. Internally, as an alterative in doses of $\frac{1}{2}$ gr. in indurated glands, arterio-sclerosis, and spinal cord degenerations. Reduce dose to 1-10 gr. after first few days. *Nitras*, used in 5% ointment in cracked nipples, chapped lips, etc. *Plumbum metallicum*, in 3x to 6x, is used in sclerotic conditions, tremor paralyses, and muscular atrophies. Possibly it may do good, but I would advise caution.

PODOPHYLLUM. *In large doses* (5 to 15 gr; resin, $\frac{1}{4}$ to $\frac{1}{2}$ gr.). It has been unwisely recommended in doses as high as $1\frac{1}{2}$ gr. of the resin. The brown resin is to be preferred to the yellow, since it does not gripe so much. Large doses are hydrogogue cathartic. There is really no reason for employing podophyllum itself, since its resin (*Resina podophylli*) so well represents it. In malarial regions and with phlegmatic persons these large doses are indicated, but it is a mistake to give large doses to nervous, high-strung individuals. It looks simple enough in the books, and quite innocent at that, but, as a matter of fact, these large doses are apt to make a city dweller so sick that he will hunt another doctor. However, large

doses are often of marked value in the removal of small gall-stones. Give $\frac{1}{2}$ gr. doses, and follow with as much olive oil as the patient will take. The griping and nausea of large doses are not so marked if it is combined with leptandrin and small quantities of ipecac. When a decided laxative but not a cholagogue effect is desired, $\frac{1}{8}$ gr. doses are indicated.

In small doses. It has been noted that triturations of the resin act much more comfortably than does the crude resin. I can highly recommend the 2x trituration. Small doses of it suffice for young children, and one does not fear overdoing the dose, while a 1 gr. tablet of the 2x every half hour until ten are given is an admirable way to give it to adults. We do give calomel that way. These small 1-100 gr. doses of the triturated resin are indicated in inactive conditions of the digestive tract with a dirty yellow coating at the base of the tongue, sluggish circulation, and abdominal torpor. Conditions of constipation with so-called biliousness and jaundice, more especially if chronic, are really more permanently relieved by small doses than by large ones. Besides that, these continued doses are alterative. All in all, small doses of podophyllin cover a great many cases, and in the rational use of it here suggested is not apt to nauseate.

POLYGONUM PUNCTATUM, *Smart-weed*. Only fresh plant preparations are of any value. *In large doses* (ec. tr., 30 to 60 m) used in amenorrhea in young girls and suppression due to cold. *In small doses* (5 to 10 m) useful in flatulent colic with griping pain. The drug is a carminative antispasmodic of secondary importance.

POLYMNIA UVEDALIA, *Bearsfoot*. Employed in conditions of vascular atony with functionally enlarged and painful glands, as in enlarged spleen, hypertrophy of the liver, and uterine subinvolution. (Ec. tr., 3 to 10 m.)

Externally, it is employed in spinal irritation (ext. 25% in ointment), and as a hair tonic (ec. tr., 25% combined with other agents). This drug is in use principally by the older eclectics, who consider it of positive value in glandular troubles, although in general a weak agent.

POLYTRICHUM JUNIPERUM, Hair-Cap Moss. This common moss is a hydrogogue diuretic. An infusion made from a handful of the green plant is one of the most positive diuretics of a non-irritating character. It has been known to increase the flow of urine in dropsy to the extent of voiding forty pounds in twenty-four hours. Its preparations are not very reliable. Probably the ec. tr., in 20 to 60 ℥ doses, is about the most active of them, but the infusion is to be preferred.

POPULUS CANDICANS, Balm of Gilead. A fluidextract of the leaf buds is used in making the "syrup of white pine." The agent is an excellent one, used alone, in doses of 30 ℥. Its range of utility is in acute colds with bronchial irritation and hoarseness.

POTASSIUM, Acetate. Diuretic, refrigerant, alterative. Used in dropsy, gout, and rheumatism in 30 gr. doses. **Bicarbonate**, antacid, antilithic, and diuretic in 4 to 5 gr. doses. It is a valuable salt. **Bichromate.** See Dichromate. **Bitartrate**, "Cream of Tartar," aperient in 2 to 3 ʒ doses and diuretic in 30 gr. doses. **Bromide.** This important drug will not be discussed in detail here. Personally, I do not believe it can be of any permanent use, and may be very harmful in diseases produced or accompanied by organic lesions or nutritive changes. Its unwise use has done a vast deal of harm in epilepsy. We should not forget that brominism is manifested by a general failure of the mental powers, anesthesia of the mucous membranes, partial paralysis of a peculiar nature, acne,

loss of sexual power, and weakened heart. *In large doses* (20 to 40 gr.) it is employed in great nervous excitement following nervous strain, sleeplessness, and delirium, nightmare (according to age), mania, some cases of epilepsy (with caution), chorea, and tetanus. In strychnia poisoning single doses of 60 gr. may be given. *In moderate doses* (10 to 20 gr., usually 15 gr.) in sleeplessness from exhaustion, migraine from irritable nerves, neuralgia from same cause, palpitation at climacteric, seminal emissions, nymphomania, and priapism. *In small doses* (1 to 3 gr.) in infantile wakefulness, colic, convulsions from tooth or bowel irritation, and in whooping cough. In adults, give small doses for acne occurring at puberty or menstrual periods. The homœopathic use in minute doses is absolutely useless and a waste of time. *Carbonate*, in 15 gr. doses, is antacid, antilithic, and cholagogue, of value in acid dyspepsia, jaundice, etc. The 1x trituration taken for long periods is asserted to be of value in hip-joint disease, anemia with constant backache in young girls, and ulcerative pulmonary phthisis. *Chlorate*, alterative, antiseptic, antisialagogue, employed now principally in mercurial salivation in doses of 3 or 4 gr. Internally, it is apt to cause inflammation of the kidneys, and its general use is almost abandoned. Externally, in 3 to 5% solution in ulcerated states, particularly in mouth and throat. *Citrate*, diaphoretic and refrigerant in 15 gr. doses. *Cyanide*. This is an antispasmodic and sedative that markedly depresses the heart. The U. S. P. has unwisely incorporated it. We have already in use altogether too many dangerous cough sedatives. It is suggested in 1-6 gr. doses in certain mental diseases, angina pectoris, etc. We have borrowed it from the homœopaths, who use 1-100 to 1-20 gr. doses in aggravated neuralgias in temporal, orbital, and supramaxillary.

lary regions, and the agonizing pain of cancer of the tongue. In my opinion, its only safe use is in removing silver nitrate stains (1% solution), although in desperate pain we may properly use it as a last resort. Its use in whooping cough is exceedingly dangerous in all cases. *Dichromate* (or bichromate). I do not know who has played a practical joke upon the regular writers in having them assign this agent to the list of internal remedies under the classical homœopathic indications of long, long ago. However, he did a good thing, but a 1x or a 2x triturate is strong enough, and 1-5 gr. doses are hardly required and are apt to lead to gastric irritation. Both our recently revised *materia medicas* and the old homœopathic ones recommend it in aphonia, due to catarrh, with viscid mucus, chronic coryza, gastric ulcer, syphilis, and syphilitic ulcers and vegetations. In order to get a good working idea of the mental processes involved, read a homœopathic *materia medica* in comparison with the "made in Germany" therapeutics of to-day. It is exceedingly easy to "discover" new therapeutics when it is already worked out and presented in symptomatic indications rather than in a nosologic classification in literature with which the regular profession are not familiar. It would not be at all hard to prognosticate a whole list of *future* "made in Germany" ideas from homœopathic literature, and the *coming* "ethical proprietary" pharmaceuticals from eclectic formulæ not yet scooped up. *Ferrocyanide*, 7½ gr. doses, in phthisical night-sweats. *Hydroxide*, escharotic in gangrene and warty excrescences. Used very unwisely internally in ¼ to 1 gr. doses, well diluted. *Hypophosphite*, a valuable nerve tonic reconstructive, in 5 to 20 gr. doses. *Iodide*, in large doses, a most valuable alterative if discreetly used. It should not be given when there is irritation of the gastro-enteric or

renal membranes. It is indicated in blood dyscrasias, chronic glandular inflammations, and in indurations. Naturally, this covers a whole class of diseases too well known to demand discussion here. *In small doses* ($\frac{1}{4}$ to 1 gr.) useful in catarrhal pain in frontal sinus, catarrhal neuralgia of face with acrid nasal discharges, lachrymation with injected conjunctiva, raw feeling in larynx with greenish expectoration, descending colds, and in pneumonia when hepatization commences. (Iodide of ammonia when desired to combine with ammon. carb.) Very small doses (1-10 gr.) sometimes effective. *Muriate* ("Kali Muriaticum" of homeopathy) is used in 3x trituration in catarrhal affections, subacute inflammations, fibrinous exudations, and glandular swellings. *Nitrate*, a diuretic refrigerant in 5 to 30 gr. doses. Doses of $\frac{1}{2}$ to 1 gr. are sometimes used in suppurative nephritis. *Permanganate*, an emmenagogue in 1 gr. dose in pill. A valuable antidote for morphia. As a wash in throat troubles (diphtheria, etc.), 5%. In general surgery as an antiseptic wash (10 to 20 gr. to 1 pint water). When applied to mucous membranes, only enough to cause slight reaction. Better commence with only enough to give a carmine pink tint to the water, and run up as case demands. *Potassium* and *Sodium tartrate*, or "Rochelle Salt," saline, cathartic, refrigerant. Average dose, 2 3. *Sulphate* in doses of 2 to 4 3 is actively cathartic, while 30 gr. is diuretic and aperient. It is also classed as anti-galactic. Doses of 1 or 2 gr. are suggested in oxaluria.

PRUNUS VIRGINIANA, *Wild Cherry*. This name is deceptive. The true *Prunus virginiana* is the choke cherry, whereas the bark used in medicine is from the *Prunus serotina*. The U. S. P. syrup of wild cherry while in no sense an active expectorant, yet has been proven by experience to be a very useful agent. Besides its soothing

properties, it is tonic, agrees well with the stomach, seems to be especially adapted to subacute and chronic coughs, and is an admirable vehicle. Dose, 1 f3.

PTOLEA TRIFOLIATA, *Wafer-Ash*. The bark of this shrub contains considerable berberin. The fluidextract in 15 to 20 ℥ doses is of value in atonic states of the stomach. It is rather pungent and astringent, and serves admirably in atonic diarrhea.

PULSATILLA, *Wind Flower*. This very valuable drug has been badly used by the regulars. For many years it has been very highly esteemed by the sectarians, who established it in popular favor. It finally became official, but the tincture was made of the dried herb, although it was well known that its active principle, anemonin, is very volatile and is quickly dissipated by drying. Frankly, a tincture of hay or cornhusks would exercise about the same influence as did most of the tincture of pulsatilla. Naturally, it disappointed the profession, since it was usually almost inert. Since it is no longer official, and individual initiative, rather than official standards, is followed, some houses are making fairly active preparations of the drug. On the other hand, physicians who were sent the mother tincture by wholesalers who were out of stock and sent to a homœopathic pharmacy for a supply, gave the drug, very unwittingly, in vastly excessive doses, and got bad results. Botanically, it is closely allied to aconite, and in large doses is a dangerous and highly irritating drug, depressing the circulation and temperature. It paralyzes the nerves and induces coma.

The best pulsatilla grows in Germany, and both the imported mother tincture and the German tincture are about identical and are thoroughly reliable. The ec. tr. is much more concentrated, and is very active. I employ it when using pulsatilla in moderate doses, but pre-

fer the imported tincture or the first decimal dilution when using small doses. All tinctures of pulsatilla deteriorate in time, and should be purchased in small quantities. Anemonin is readily decomposed by alkalies and metallic salts, and hence pulsatilla should not be combined with such agents.

In moderate doses (ec. tr., 1 m; ⑧, 5 or 6 m) it is of value in diseases of the reproductive organs caused by deficient or defective innervation, and also, inversely, in hysterical, melancholic, and spasmodic manifestations induced by sexual derangements. Amenorrhea with mental perturbation, spermatorrhea, menstrual disorders with headache, chilliness, languor, nausea, water-brash, and nervousness, as well as some cases of hysterical convulsions and the urinary irregularities of pregnancy, all respond nicely to this drug if properly pushed, but it is not a remedy for pain except incidentally as it relieves spasm. Homœopathists assert that pulsatilla exercises a greater influence over women than over men, and more particularly women of lax fibre, of mild and yielding disposition. Probably that is true. We know the susceptibility of blonde women to belladonna. At all events, it is probable smaller doses will suffice than with women of the opposite type.

In small doses (⑧, ½ to 1 m, or even the first dilution) it exercises an influence upon the circulation partaking somewhat of the natures of both aconite and cactus, reducing inflammation in mucous membranes and equalizing the circulation. It differs from aconite in that it is more antispasmodic in small doses, and it influences the *catarrhal stage* of *congestions* and *inflammations* rather than the initial stage. For this reason, it frequently should follow aconite and sometimes alternate with it. Pulsatilla, like a great many other remedies,

should seldom be used in combination. We get most of our best results from the single drug. This is the single drug directed to catarrhal congestions, and it is a wide field. The thick, bland, and yellow or yellowish-green discharge is most affected. Potassium dichromate affects the thick, tenacious, and ropy discharge; arsenic and iodide of arsenic the irritating discharge. One may alternate with any of these when demanded, or give different ones during different stages of congestion, or full doses of ammonium chloride to liquefy or establish discharge, but pulsatilla, more than any of the others, can be depended upon in catarrhal disturbances of an acute character.

The following will simply suggest its range in this direction: Temporal neuralgia with lachrymation of affected side, otorrhea, catarrhal otitis, styes, agglutinated eyelids, ophthalmia neonatorium, subacute conjunctivitis, effects of "colds" upon eyes and ears, coryza with yellow discharge, toothache relieved by cold and due to acute congestion, catarrhal states of gastro-intestinal tract, creamy leucorrhea, catarrhal stage of gonorrhea, orchitis, acute prostatitis, greenish expectoration with cough, catarrhal symptoms of measles, and in fevers when patient seeks the open air. One teaspoonful of the tincture to a quart of water is an excellent application in many of these conditions, especially to the eyelids. Understand, pulsatilla is not here indicated as an exclusive remedy in these cases. It does overcome these symptoms of catarrh, but general systemic and local treatment should not be neglected. The sectarians have worked out a great many useful things, such as the indications for pulsatilla, but we have more resources for the deep underlying pathology than these small doses of drugs with an evanescent effect. On the other hand, in 60% of our cases there is *no especial*

cial pathology, and by relieving the symptoms nature completes the cure. We may just as well not impede nature in these cases with massive doses of drugs. Our patients will appreciate the small dose.

PULVERES, U. S. P. *Acetanilid Compositus* (acetanilid, 70%; caffeine, 10%; sod. bicarb., 20%). Average dose, 7½ gr. This is an official substitute for several proprietary mixtures. Its range of safe utility is much more restricted than the literature upon the proprietaries assert, and it should be used with care. *Aromaticus*, a carminative in 10 to 20 gr. doses. *Cretæ comp.*, an antacid used in 30 gr. doses in diarrhea. *Effervescens comp.*, the U. S. P. name for "Seidlitz Powder." *Glycyrrhizæ comp.*, a laxative containing senna, licorice, sulphur, fennel, and sugar. Dose, 60 gr. *Ipecacuanhæ et opii* (ippecac, 10%; opium, 10%); "Dover's Powder." Anodyne, antispasmodic, and diaphoretic. Average dose, 7½ gr. The present U. S. P. formula omits potassium sulphate. Some authorities think the omission a mistake. The old 1870 formula is made by Squibb and several other houses, and is readily obtainable. *Jalapæ comp.* (jalap, 35%; potassium bitartrate, 65%), a hydrogogue cathartic used in obstinate constipation and "biliary dropsy." Average dose, 30 gr. *Morphinæ comp.* ("Tully's Powder"). This is a mixture of camphor, 32%; morphine, 1½% with excipients. It is anodyne, nerve sedative, and antispasmodic. Average dose, 7½ gr. *Rhei comp.* (rhubarb 25%), an antacid, laxative, and carminative in 30 gr. doses. Its employment is principally in the diseases of children. Several effervescent powders are official, such as lithium citrate and magnesium sulphate.

QUASSIA, *Bitter Wood*. In large doses (f.e., 30 m) it acts as an emetic with some persons and is an anthel-

mintic, but is seldom given in such doses. *In small doses* (f.e., 3 to 5 ml.) it markedly stimulates all the glands concerned in digestion and increases intestinal peristalsis. It is highly useful in debilitated states of the digestive tract with inactivity of the secreting organs.

Infusions of quassia, used as enemata, destroy worms in the lower intestinal tract, and, used upon the skin repeatedly, will kill *pediculus capititis* and *pediculus pubis*.

QUEBRACHO, *Aspidosperma*. Mariasi y Larrion, who has investigated quebracho, says of it: "The principal action of this drug is to cause a diminution of the number of pulse-beats per minute and lessen the frequency of the respiratory act." The homœopaths use it as we do, but prefer the 2x and 3x trituration of the alkaloid, aspidospermine. Full doses of it are given by some ($\frac{1}{4}$ to $\frac{1}{2}$ gr.). The fluidextract is representative, and is used in doses of 10 to 60 ml. *In large doses* it possesses some value in malarial fever, and is so used in South America. The fluidextract, in 15 ml. doses, is of value in dyspnea due to asthma or heart disease, asthma with emphysema, uremic asthma, and dyspnea due to fatty degeneration of the heart. Hale calls it "the digitalis of the lungs." It is a safe remedy, and prompt in action.

QUERCUS, *White Oak*. The fluidextract of the bark is an astringent, antiperiodic, and tonic in 15 to 30 ml. doses. It is of value in certain bowel troubles as an astringent, in obstinate intermittents, exhausting sweats, diabetes, and passive hemorrhages. The decoction is employed upon ill-conditioned ulcers, in sore throat as a gargle, and as a wash upon the skin in debilitating disease with relaxation and exhaustion. *Spiritus glandium quercus*, or distilled spirit of acorns, is given to allay the craving for alcoholic drinks. (Ten drops in water, two or three times a day.)

QUILLAJA, *Soap Bark*, is used pharmaceutically, and the tincture, in 15 ml doses, is classed as expectorant. It is expectorant, but is altogether a minor remedy. Two or 3 ml doses are large enough, and exercise some influence in the early stages of coryza and catarrhal sore throat.

QUININA, *Quinine*. The alkaloid, the bisulphate, the hydrobromide, the hydrochlorate, the salicylate, and the sulphate are official in average doses of 4 gr. For local use the alkaloid is to be preferred. Subcutaneously, the bisulphate is most reliable as a rule, and its ready solubility makes its internal use oftentimes preferable to the sulphate. Its 0.2% solution is used as a douche in coryza. The salicylate is markedly antiseptic. The official oleate (25%) is well adapted for inunctions.

In large doses (6 to 20 gr.) quinine is so important a drug that space precludes any adequate presentation in a small volume like this. It is antipyretic, antiperiodic, antiseptic, and emmenagogue; employed to reduce fever in typhoid, pneumonia, and other states; to destroy the malarial parasite in the many forms of malarial fever; as an antiseptic in the intestinal canal; and in amenorrhea and to hasten labor as an emmenagogue.

Since the plasmodium *malariae* is destroyed in solutions of 1 part of quinine to 20,000 of water, the excessive doses formerly used do not seem necessary. Moderate doses, given during the intermission, are effective, and do not so disturb the nervous system. In continued types of fever it is best to give quinine when the temperature is at its lowest point or the secretions the most active. Quinine always acts best when the skin and tongue is moist and the pulse soft and open. Phenacetin is a valuable agent to promote these conditions and prepare the system for quinine. Where there is no remission in fevers, qui-

nine should be employed cautiously, if at all, but once the fever subsides quinine is highly necessary. In intermittents, I like broken doses of the sulphate in the intermission. In congestive chill, we want full doses with stimulants and local heat. As an antipyretic, quinine is less used than formerly, but cannot be entirely shoved aside. Probably we have given too large doses. In amenorrhea, it is best to give a warm bath and follow with good doses. In labor, 10 or 15 gr. of the bisulphate at one single dose is indicated in uterine inertia, and the lack of nervous force upon the part of the patient.

In small doses (2 gr.) it is a valuable bitter tonic, the bisulphate being preferable to the sulphate. It may be used in many conditions, but is commonly employed in convalescence from pneumonia and other debilitating disease, especially where there has been sepsis, prostrating discharges, or nervous debility. In states of debility in chronic disease with night sweats or congestive visceral states marked by atonicity, it is quite useful alone or combined with other indicated drugs. Quite adequate doses of quinine can be administered to infants by injection.

In minute doses (1-10 gr. or 1x trituration) quinine has a certain range of utility in cases marked by periodicity and spinal sensitiveness. Headache of malarial origin, neuralgia relieved by pressure, the aching sensitiveness along spine and back of the neck, and subacute facial neuralgias are oftentimes much relieved by these small doses if frequently repeated. The homœopathic *Chininum arsenicosum*, or arsenite of quinine, in the 2x, is an excellent tonic, markedly benefiting persons inclined to neuralgia and where there is a sense of weariness and prostration. In uncomplicated diarrhea it is effective. The 1x is full dosing, but can be carefully employed in obstinate intermittents.

RANUNCULUS BULBOSUS, Buttercup. *In large doses* (8, 10 to 30 drops, repeated as necessary) this rather toxic drug is used in delirium tremens. *In small doses* (8, 1 or 2 ml., or even the first decimal dilution) this drug influences spasmodic troubles of the chest wall, such as pleurodynia, soreness in the intercostal spaces, muscular soreness about shoulder blades, and stabbing pain in the chest, such as results from pleurisy. It is not wise to depend upon this drug to cure the pleurisy itself. Herpetic eruptions, shingles, and vesicles upon the cornea are said to be relieved by this agent. Large doses should never be used, since the plant is an acrid narcotic. It is of secondary importance as a remedy, and is not very uniform in action.

RESORCINOL, Resorcin. This chemical was originally derived from natural resins and used internally as an anti-septic in doses of 2 to 5 gr., and as an antipyretic in 15 to 20 gr. doses, and was a valuable drug. The present U. S. P. drug is made synthetically, and the average dose is given as 2 gr. Large doses are dangerously depressing. Since the drug is so changed, it is very much open to question whether it presents any advantages over phenol. Externally, it is more convenient, probably, and is used in 5 to 30% solution or ointment in various skin diseases and gonorrhea. It has a large list of incompatibles.

RHEUM. *In large doses* rhubarb is cathartic, combining an astringency that renders its action easy, yet satisfactory. Used to free the bowels of offending matter in diarrhea and in atonic states of the bowel. It combines well with aloes. Powdered root, 20 to 40 gr., purgative; 10 to 20 gr., laxative. The extract is given up to 15 gr., and the fluidextract as high as 1 fl. oz., but usually not over 30 ml.

In small doses the tonic properties of rhubarb are secured. It is not used uncombined to any extent, but enters into various formulæ. For infants with acid diarrhea and the gastro-intestinal irritation incident to dentition, quite small doses of the *Syr. rhei aromat.* are indicated. The old eclectic formula, now incorporated into the National Formulary as *Syr. rhei et potassii comp.* and known as "neutralizing cordial," is the very best antacid stomachic ever devised for children. The dose is from $\frac{1}{4}$ to 4 fls, according to age and conditions. Children seldom demand over 1 teaspoonful.

RHODODENDRON, *Snow Rose*. The "first potency" of this agent is used in rheumatic and gouty disorders, ciliary neuralgia, and hydrocele. It is very doubtful whether such small doses would be of any service. In Russia it is customary to make a decoction of 2 3 of the leaves and take at one dose, repeated daily until relieved. These doses are said to be quite effective.

RHUS AROMATICA, *Fragrant Sumach*. This plant has attained a place in the treatment of polyuria, nocturnal enuresis, diabetes insipidus, urinary incontinence, hematuria, and cystitis. F.e. or ec. tr., 10 to 30 ml; @, 30 to 60 ml.

RHUS GLABRA, *Smooth Sumach*. The dried fruit is official. The fluidextract, in 10 to 30 ml doses, is astringent, and used in diarrhea and ulcerated states of the stomach and bowels. Locally, it is applied to soft, spongy gums, apthæ, and pharyngitis.

RHUS TOXICODENDRON, *Poison Ivy*. *In large doses* (f.e. of leaves, 6 to 30 ml) it is a stimulant narcotic, somewhat irritant to the stomach and bowels and irritant to the nervous system like large doses of *nux vomica*. These

doses have been suggested in a number of conditions, but they are apt to be very erratic in action and are much more liable to do harm than good, and, despite certain authors to the contrary, it is very unwise under any circumstances to give them. The probable reason these men have not met with disaster is that the preparations they used were nearly inert.

In small doses the fluidextracts and tinctures as usually made are of practically no value at all. The therapeutic agents in this leaf are the acids and oils dissipated by drying, and only preparations from the freshly gathered leaves should ever be used in medicine, and even these preparations should be destroyed when a year old and fresh stock secured. A good plan is to order direct from the factory 1 $\frac{3}{4}$ of ec. tr. and dilute this with 9 $\frac{3}{4}$ of 76% alcohol, thus making a reliable tincture, as the ec. tr. is rather dangerous to one's own hands. This tincture can be used in doses ranging from $\frac{1}{4}$ to 10 m, or the 0 can be used in the same doses. Usually 1 drop doses or even less give better results than do the larger doses. The drug can be said to be fairly effective up to the third decimal dilution, but in acute conditions it impresses me that larger doses than the 3x should be used. Higher than that I have never used it, since I do not believe in the so-called dynamization theory. Prof. G. Hardy Clark, of Hahnemann Medical College, Chicago, says: "One or 2 drops of the tincture have been used with satisfaction, but doses ranging from the first to the fourth decimal dilution are more generally employed." Extreme homœopaths do not agree with him, and seldom use it below the 12x. Frankly, it is a peculiar drug. I have secured unexpectedly good results with it in some cases, and no results whatever in other similar cases. When it

does benefit at all it does so in no uncertain way. It is undoubtedly a very powerful and useful remedy, but there is something about it not understood as yet. The indications subjoined are by Ellingwood, an eclectic, and Boericke, a homœopath.

Eclectic indications: "In inflammatory fevers with sharp, hard pulse; acute inflammation involving the skin, with bright, circumscribed redness; extreme soreness or sharp, burning pain; extreme redness of local parts inflamed, with great local heat and sharp pain; sharp supra-orbital pain, especially of the left orbit; burning in the eyes with flushed face; inflammation with constitutional impairment, evidenced by a sharp, red tongue and deep red mucous membranes. The tongue has a pointed tip upon which the papillæ are elongated and pointed." Their "specific medication" theory aside, they practically use it in acute erysipelas; typhoid fever with sordes, red tongue, flushed face, and evidences of sepsis; cerebral irritation in the course of fevers; in the latter stages of severe types of the exanthematæ; in acute inflammatory rheumatism and some forms of chronic rheumatism; in gastro-intestinal disorders of children with cerebral irritation; in septic cholera morbus; and in suppurative diseases of the skin with redness. They esteem it very highly.

Homœopathic indications: "Mind—extreme restlessness and delirium. Head—vertigo when rising, heavy feeling, occipital pain. Eyes—swollen, red, edematous. Lids inflamed, scalding tears. Face—swollen, irritation in articulations of jaws. Mouth—tongue red and cracked, corners of mouth ulcerated. Throat—swollen glands. Stomach—want of appetite, great thirst. Abdomen—pain, relieved by lying upon abdomen. Urine—dark, turbid, scanty. Respiratory—dry, teasing cough. Heart

—pulse is quick, weak, irregular, and intermittent. Extremities—hot, painful swelling of joints. Fever—adynamic, restless, trembling. Skin—red, swollen, vesicles, intense itching. Sleep—heavy, stupor. Modalities—worse, cold and wet weather, at night, during rest. Better, warm dry weather, motion." This is a mere abridgment of four pages of symptoms, but it illustrates the complicated indications of homœopathy. Practically, they arrive at just about the same place as the eclectics, with the addition of sprains, granulated eyelids, smallpox, hypertrophy of the heart, and some menstrual difficulties.

If our pharmacologists investigated the matter in detail, they would probably arrive at indications amounting to about this: An inhibitory agent in cerebral engorgement, influencing the vaso-motor mechanism; a sensorial sedative inimical to toxic irritation, increasing nerve tonus and promoting the functional activity of the terminal nerve filaments; a vital alterative, influencing defective metabolism.

RICINUS, Castor Oil. A valuable cathartic in $\frac{1}{2}$ to 1 fl \ddagger dose. Its disagreeable taste can be overcome by adding to it a small quantity of an alcoholic solution of saccharin and some essential oil. Cinnamon serves admirably. The mixture may require a "shake" label, depending upon the kind of alcohol used, since the oil does not combine well with alcohol below 98% absolute.

RUBUS, Blackberry. The fluidextract of the bark of the root is an agreeable tonic astringent, in 10 to 30 m doses, in syrup or elixir. Its field is in the diarrheas of infancy marked by large, watery discharges of a clay color. An infusion of the fresh root is quite effective.

RUMEX CRISPUS, Yellow Dock. In large doses (f.e., 30 m) a valuable alterative, tonic, and laxative of direct

utility in cutaneous disorders affecting persons of the strumous diathesis. *In small doses* (Θ , 1 or 2 mL) it is esteemed in tickling cough, aggravated by talking and night air, and with rawness of larynx and trachea. It is said to cure exhausting morning diarrhea marked by brown, watery discharges.

SABADILLA, Cevadilla Seeds. The Θ is employed in small doses in cases of intestinal worms and in hay fever, lachrymation, spasmodic sneezing, etc. Quite material doses are given for worms.

This is the Indian caustic barley, a species of asagræa containing veratrine (q. v.). It is a highly toxic agent with no reliable antidote and is very erratic in action. It is not a safe agent at all for intestinal worms. The fluid-extract was at one time used in 2 to 4 mL doses, but has gone out of favor. It is an exceedingly disagreeable drug that I do not care to use at all. Possibly, the small doses are of value, but homœopathy offers so much better drugs I do not see why they use this one.

SABAL, Saw Palmetto. This is a sedative to genito-urinary irritation, and is a nutritive tonic with mild, aphrodisiac properties. It influences all mucous membranes more or less, but more particularly the membrano-prostatic portion of the urethra. It is prescribed in enlarged prostate, epididymitis, impotence, sexual neurasthenia, enuresis, chronic gonorrhea, tender ovaries and breasts, and chronic bronchitis. (F.e., 10 to 30 mL .)

This is a valuable remedy, now official, but the wonderful claims made for it in permanently curing the enlarged prostate of old men and increasing the female breast are not borne out. If used for a long time it is of some value in these directions. Small doses are not effective.

SABINA, Savin. This gum resin is very disagreeable

in substance, and is rarely used. It is rubefacient, emmenagogue, and vermicide. The f.e. is used in 5 to 15 m doses in amenorrhea. The oil may be used in 1 to 4 m doses for worms.

In small doses (0, 1 m every hour) it is used in gout and uterine pains with a tendency to miscarriage. Smaller doses, if miscarriage appears imminent. The tincture is also applied to warts. These homœopathic claims have not received any very general support, and the small dose should not be depended upon.

SACCHARIN, *Benzosulphinidum*. A non-fermentable sweetener, 550 times as sweet as cane sugar. Used pharmaceutically.

SAFFRON, *Crocus Sativus*. "Saffron tea" is a domestic remedy of little real value, but used to promote efflorescence in the exanthematæ. The American saffron, or *Carthamus tinctorius*, is really much more active. It is laxative in large doses. The homœopaths formerly used crocus in chorea and hysterical affections and dysmenorrhea with black, tenacious discharges. Some of them still use 5 m doses 0 in this connection.

SALICINUM, *Salicin*. Antirheumatic, antiperiodic, and bitter tonic. *Large doses* (20 to 30 gr.) are of value in acute rheumatism. It is safe in large doses, and while not so potent as the salicylates, can be used when they are contraindicated. As an antiperiodic, it is used in chronic forms of malaria, in 10 to 15 gr. doses. *In small doses* (2 to 5 gr.) it is a gastric tonic of value in chronic atonic dyspepsia with a tendency to diarrhea.

SALIX NIGRA AMENTS. *Pussy-Willow Buds*. This drug is urged as of marked value in controlling sexual hyperesthesia. It is used in satyriasis, erotomania, nymphomania, and spermatorrhea. It is suggested in dif-

ficult menstruation, hysteria, and ovarian congestion. (Ec. tr., 10 to 30 ml.; @, 30 to 60 ml.) This remedy has not been very extensively used as yet, and it is altogether probable that its advocates claim too much for it. Small doses are not effective. In my hands large doses have given fair satisfaction. Use only green bud preparations.

SALOL, *Phenylis Salicylas*, U. S. P. This synthetic chemical is broken up into phenol and salicylic acid by the action of the pancreatic juice; hence its action is that of these two agents. Its advantage consists in the fact that these valuable antiseptics thus pass the stomach intact and really reach the intestinal tract. About 40% of phenol is liberated, and large doses should be given very guardedly and not at all if the kidneys are inactive. The larger doses used are indicated as an intestinal antiseptic and in rheumatism, and the smaller doses in cystitis, urethritis, etc. The U. S. P. states the average dose as $7\frac{1}{2}$ gr., which I consider too high, as it is equivalent to 4 gr. of phenol, the average dose of which is 1 gr. Personally, 2 to 5 gr. seem a proper dose, especially since they are quite effective. As an antipyretic and analgesic too large doses are required to be within the bounds of assured safety. As high as 90 gr. in twenty-four hours have been recommended, but some gentlemen become overenthusiastic with internal antiseptics. These same men would not think of giving 36 gr. of phenol in enteric pills in twenty-four hours, yet that is what, in effect, they are doing.

"SALTS," *Sal Acetosella*, is potassium binoxalate; *Sal ammoniac*, ammonium chloride; *Tartar*, potassium carbonate; *Epsom*, magnesium sulphate; *Glauber's*, sodium sulphate; *Monsel's*, iron subsulphate; *Rochelle*, potassium and sodium tartrate; *Seignette*, the same; *Sorrel*, same as acetosella; *Volatile*, ammonium carbonate.

SALVIA, Sage. The dried leaves are official, but not any preparations. The infusion and the ℥ (in 20 to 30 drop doses) are reliable. Sage is used as a condiment, carminative, and antihydrotic. As a gargle it is a useful astringent and antiseptic. A fluidextract is made and used in 10 to 60 ℥ doses, but the ℥ as made from the fresh leaves tastes better and mixes with hot water nicely. A cold tea, made in this way, is effective in night sweats. *Salvia sclerata* possesses nerve tonic influences, and 1 or 2 teaspoonfuls of its tincture to a pint of hot water is useful for sponging the skin of debilitated persons.

SAMBUCUS CANADENSIS, American Elder. The recent flowers in warm infusion are diaphoretic and stimulant; the cold infusion, diuretic. The ec. tr. is made from the green inner bark. The eclectics esteem it in edametous skin diseases and in depraved deposits and watery infiltration. Ten drop doses are employed as an alterative. Very large doses are hydragogue cathartic and emetic. The ec. tr., in 15 to 30 ℥ doses, is safe and effective in dropsy, most markedly so in post-scarlatinal dropsy. The f.e. (flowers) is given in doses of $\frac{1}{2}$ to 2 f3.

SAMBUCUS NIGRA, European Elder, is used as an alterative and laxative in doses of $\frac{1}{4}$ to 1 teaspoonful of the fluidextract of the bark, and, in 10 drop doses, as an adjunct to bitter tonics. Small doses of the ℥ are employed in dry coryza and the dry and obstructed nasal catarrh of infants.

SANGUINARIA, Blood-root. In large doses (f.e., 15 ℥; ec. tr., 10 ℥) a harsh emetic very seldom used. In moderate doses (f.e., $1\frac{1}{2}$ ℥; ec. tr., 1 ℥) a stimulating expectorant. It does not act well in these doses with children. With adults it is of value in atonic conditions of the lungs or bronchi, but should not be loosely prescribed in all manner of acute and chronic coughs.

In small doses (f.e., $\frac{1}{4}$ m; ec. tr., 1-6 m; 0, 1 m) it is indicated when there is irritable cough with the air passages dry, hot, and swollen. Especially useful when there is a sense of constriction in the throat, with a raw, sore feeling. In chronic cough, with a dry throat and circumscribed redness of the cheeks, and also in nasal polypi with mucous discharges, it is a valuable drug. These small doses promote the activity of the stomach and liver, are alterative, and influence the respiratory system in an eminently satisfactory manner. We have long been giving sanguinaria in doses entirely too large, and have failed to appreciate its great value. The *nitrate of sanguinarine*, in 1 gr. tablet triturates of the 3x, is an admirable way to give small doses.

SANTONINUM, *Santonin*. A very reliable vermicide in 1 gr. doses combined with calomel or a laxative. Young children should not be given over $\frac{1}{2}$ gr. Do not give during fever or constipation. One to 3 gr. of the 1x trituration is used by homœopathic practitioners. Santonine is an uncertain emmenagogue, and has been recently suggested as a nerve stimulant in tobacco amaurosis, locomotor ataxia, epilepsy, etc. There is no very tangible reason *why* it should be a nerve stimulant except that some old sectarian writers said so many years ago.

SARRACENIA PURPUREA, *Pitcher-Plant*. Every few years someone exploits this plant as a sure cure for small-pox. As a matter of fact, 1 teaspoonful doses of the tincture are laxative and eliminative, somewhat increasing the flow of urine. An infusion of the fresh root is bitter, containing a substance decomposed by drying, and quite reliable observers assert that such an infusion can be freely given during the course of zymotic diseases, modifying their course somewhat and preventing sequelæ. It

was so used by the Indians of Canada, and was introduced into homœopathic medicine. They use it empirically, more or less, but it is not "homœopathic" to smallpox. It has no established place in therapeutics. For its interesting history, see "Scudder's Specific Medication."

SARSAPARILLA. The sources of supply of sarsaparilla root are so uncertain and its preparations so variable that, as an alterative, the drug is not usually very dependable. The fluidextract is useful as a flavor, and sometimes useful as a medicine. The best plan is to select a crude drug that when chewed for a while develops the peculiar acrid taste of a good grade of sarsaparilla. Make a decoction of this and administer in ounce or 2 tablespoonful doses, running up to 4 tablespoonfuls. It has long enjoyed a reputation in secondary syphilis. In small doses it is of no value.

SASSAFRAS is aromatic, astringent, and alterative, and is esteemed as a preventive of contagion by some of our foreign population, who eat onions and drink sassafras tea as soon as contagious diseases appear. Some physicians practicing among them think these agents exercise some influence in the matter. Possibly! The oil of sassafras in large doses is a narcotic poison. Most narcotics, in minute doses, exercise more or less of a stimulating influence, and probably sassafras may possess more remedial influence than we have thought. The popular idea that it "thins the blood" simply reflects a belief in its alternative properties.

SCAMMONIUM. A hydrogogue cathartic used in doses of 2 to 8 gr., but seldom employed now except in combination with other agents.

SCILLA, *Squill.* *In large doses* (f.e., 10 m) it is an emetic, but it is unwise to use it in this connection except

in the form of the compound syrup, or so-called "hive syrup," in case of croup, to the point of nausea, or slight emesis in severe cases. This useful syrup is given to children in doses of 10 to 30 ml., and to adults, 20 to 60 ml., as an expectorant. In general, squill is not given to children to any great extent.

In moderate doses (f.e., 1 to 2 ml.; syr., 15 to 30 ml.; vinegar, 10 ml.) it is an expectorant used in dry, irritating bronchial coughs and as a diuretic in cardiac dropsy. Smaller doses are employed in the chronic bronchitis of old people with mucous râles, dyspnea, and scanty urine.

SCOPARIUS, Broom. *In large doses* (f.e., 2 fl.oz.) cathartic. *In moderate doses* (f.e., 30 ml.) a valuable diuretic in cardiac dropsy, the anasarca of chronic disease of the kidneys, and scarlatinal albuminuria. See also Spar-teinæ sulphas.

SCUTELLARIA, Skullcap. A mild nervine antispasmodic, in 30 to 60 ml. doses of the fluidextract. Little can be expected of it except in functional disorders. It is a sedative useful in functional "nervousness" and mild hysteria.

SENECIO AUREUS, Life Root. Another "uterine tonic" indicated in a general hyperemic, irritable, and atonic condition of the pelvic organs. (F.e. or ec. tr., 10 to 40 ml.)

SENEGA. *In moderate doses* (syr., 1 fl.oz.; f.e., 15 ml.) it is used in deep, hoarse cough, with mucous râles and free secretion. Scaly skin diseases are benefited by its continued administration, due to its diuretic and alterative properties.

In small doses of the ☰ the homœopaths claim results in catarrhal diseases of the eyes generally, but more particularly in blepharitis, muscular asthenopia, and opacities of the vitreous humor.

SENNA. An efficient and safe cathartic. An infusion

of 30 to 60 gr. of the leaves is taken at one dose. A convenient way to prepare it is to pour a pint of boiling water upon an ounce each of senna leaves and peppermint herb, let stand until cold, filter, and administer in doses of 1 wineglassful every morning. The so-called "antibilious physic" is made of powdered ginger, 1 $\frac{3}{4}$; jalap, 8 $\frac{3}{4}$; and senna, 16 $\frac{3}{4}$. Dose, 1 teaspoonful. The aqueous fluid-extract is given in twice the dose of the U. S. P. fluid-extract, but is less griping. (F.e., $\frac{1}{2}$ to 2 f3.) *Small doses* (1 or 2 gr. pills, extract) are a gastro-intestinal tonic, and are recommended in oxaluria and conditions of nitrogenous tissue waste.

SEPIA, Dried inky juice of cuttlefish. The ancients used a decoction of the cuttlefish for affections of the generative organs, urine, and skin. Hippocrates referred to it in his writings, and as long ago as Paracelsus it was known to influence what we know as the portal circulation; then Hahnemann dug it up from the old literature (as he did a great many other things) and limited its use to the inky juice in small doses. Sepia is used by artists as a water color. The alcoholic mother tincture is a disagreeable, rather oily substance with a taste of propylamine. I cannot find any authority for the statement, but I believe it does really contain that substance. Propylamine and trimethylamine are supposedly isomeric. These substances are rather widely distributed. Cod-liver oil, shark-liver oil, herring brine, ergot, and several medicinal plants contain it. While possessed of the same number of atoms, these various amines have differing graphic formulæ and quite different properties. Trimethylamine has a more or less established place in therapeutics, being used in rheumatism and chorea. Some authorities consider the trimethylamine content of ergot quite an important factor in its therapy. It is known, in

some of its combinations, to markedly influence the circulation. It is, therefore, altogether likely that if sepia contains it, as most visceral fish products do, it would have an influence upon the circulation, and probably also upon the womb. More definite statements would be rash, in view of the present lack of data.

The homœopaths must get some action from it, since they esteem it most highly. Their detailed provings or symptoms of this drug are elaborate, but amount to about this: Indicated in hepatic and venous congestion in lower abdominal and pelvic regions, with yellow spots upon face; flushes of heat, nausea, flatulence, yellow or greenish leucorrhea, and a marked bearing-down sensation. Personal experience is sadly wanting, but I am inclined to think there is something worth while in this remedy. I bought a quantity of the 2x tablet triturates, and used only in cases of leucorrhea of the character indicated. Upon the whole, the results were good. Some of the eclectics use it, contending that it does not act according to the "similia" idea, but is of value, as indicated above, in uterine and liver troubles. Very probably, the homœopaths overrate the value of sepia.

SERPENTARIA, *Virginia Snakeroot*, is a vascular stimulant, promoting secretion from the skin and mucous surfaces. It is used in the suppression of secretions from colds and in the course of fevers. In my own experience, a full teaspoonful of the fluidextract every three hours until three or four doses are taken is effective; but in the many chronic diseases in which it is recommended, it does not impress me at all favorably.

SILICEA, *Precipitated Silica*. This is a supposedly medicinal substance peculiar to the biochemists. They believe it to be indicated in a great many conditions. There is a small amount of silica in the skin and the nails and

traces of it in some other tissues; and indurated and suppurative states are frequently characterized by a lack of this substance. It is, therefore, probably of some use in these conditions, and may be of service in rachitic children, suppurative processes upon the skin, quinsy, styes, affections of the finger nails, and indurated tumors. I have had no experience with it at all, except that in casting about for a remedy for mild indurations and cracked finger nails, due to x-ray burns, I hit upon silicea. For several years in my hospital service I have been very much overexposed to the x-ray, and find the ix of silicea to be of considerable aid in some of the lesions. While some of the contentions made in its favor by its advocates appear very ridiculous, yet it must be classed as a tissue food neglected in regular medicine, but probably just as much indicated as manganese and other substances found in traces in living tissues. If one does not care to use this sectarian preparation, Squibb can supply the wet process silicic acid, which is really silicic oxide or precipitated silica. The natural silicic acid is infusorial earth, and is used for filtering acids. This would not do. The wet process silica should, of course, be well triturated. See thiosinamine under heading "Sinapis."

SINAPIS, Mustard. Both white and black mustard are emetic in doses of 1 or 2 teaspoonfuls, and are used as counterirritants. In small amounts are used as condiments. *Thiosinamine* is the active principle of black mustard, and is valuable in the gradual removal of scar tissue or low-grade connective tissue; as in corneal opacities, urethral stricture, visceral and connective-tissue adhesions, and chronic glandular tumors. Reference was made under "Silicea" to indurations. When tolerated well by the stomach thiosinamine is more active in such removal than is silicea, but it is not adapted to suppuration. Half gr.

doses in capsule, tablet triturate, or solution, three times a day. Gradually increase doses to 1 or $1\frac{1}{2}$ gr.

SODIUM SALTS, U. S. P. *Sodii Acetas*, a diuretic used in cystitis and dropsy. Dose, 10 to 30 gr. *Arsenias*, alternative, tonic, antiseptic, and antiperiodic in malaria, anemia, and nervous diseases (1-20 to $\frac{1}{8}$ gr.). In small doses (1-100 gr., or 2x, or in the form of cigarettes) in asthmatic cough and nasal catarrh. The exsiccated salt should be used in doses of half the above. *Benzoas*. See "Acidum Benzoicum." *Bicarbonas*, antacid, alterative, and antipruritic in average doses of 15 gr. Very large doses (2 $\frac{2}{3}$ per day) in iodism and diabetic coma. Never use as an acid antidote unless no other alkali is available, as it liberates carbon dioxide too rapidly for safety in such cases. *Bisulphis*, antiseptic, used in sore mouth, yeasty vomiting, etc. Dose, 5 to 15 gr. *Boras*, or borax, antiseptic and mildly emmenagogue in doses of 5 to 20 gr. Largely used externally. The transparent glass-like "bangles" sold as the "neutral" borax is the tetraborate, and is somewhat astringent as well as antiseptic, and is used externally in varying strength up to saturated aqueous solution. *Bromidum*, sedative and diuretic. Actions and doses about same as potassium bromide (q. v.). *Carbonas monohydratus*, used externally as an antacid antipruritic in 2 to 5% solution. *Chloras* should be handled carefully, as it explodes in a number of combinations. Deodorant, antiseptic, and alterative in doses of 2 to 6 gr. In very small doses ($\frac{1}{2}$ gr.) it is said to be useful in congested and atonic states of the uterus or in violent metrorrhagia and leucorrhea. Three or 4 η doses of Labarraque's solution is preferable to the salt when small doses are indicated. *Citras*, diuretic and antilithic in 10 to 30 gr. doses. *Hypophosphis*, nerve tonic and reconstructive. Dose, 10 to 30 gr. *Iodidum*. See Potassium Iodide.

Nitras, antiseptic, diuretic, diaphoretic. Dose, 10 to 30 gr. *Nitris*, antispasmodic, vaso-dilator, diuretic. Dose, $\frac{1}{2}$ to 2 gr. *Phenolsulphonas*, a valuable antiseptic well adapted to internal use in doses of 1 to 10 gr. and in $\frac{1}{2}$ to 1% solution externally. *Phosphas*, antilithic, laxative, cholagogue. Doses of $\frac{1}{2}$ to 1 $\frac{1}{2}$ are purgative; 10 to 40 gr. are antilithic and mildly laxative. Doses of 1 or 2 gr. have been suggested in ailments arising from excess of lactic acid with flatulence and from irritation of the stomach. Sometimes small doses cure hives. *Salicylas*. See "Acidum Salicylicum." *Sulphas*, a hydrogogue cathartic in $\frac{1}{4}$ to 1 $\frac{1}{2}$. The dried salt in half this dose. *Sulphis*, a rather disagreeable antiseptic, but peculiarly effective (when pure) to overcome sarcina ventriculi. When present the tongue is pallid, broad, and coated with a pasty white or yellow white fur. Give in 10 to 30 gr. doses. When patient objects to the taste, magnesium sulphite may be used in its place. *Sulphocarbolate*. See Sodium Phenolsulphonas. *Thiosulphas*, or hyposulphite, antiparasitic and antizymotic. Average dose, 15 gr.

SOLANUM CAROLINENSIS, *Horse Nettle*. This is a narcotic antispasmodic exploited as a remedy in the treatment of epilepsy and other convulsive diseases. The reports available are too vague to justify classing the drug as a sufficiently promising agent to warrant its trial in these conditions. It is a feeble agent. Probably the recent reports of its value in whooping cough may be warranted. (Ec. tr., 10 to 30 m.) *Solanum lycopersicum*, the garden tomato plant (leaves), is used by some homeopaths in rheumatism and influenza. (@, or first dilution, in small doses.) It is very much open to question whether their use of it is really justified. *Solanum nigrum* is the black nightshade, and its action is somewhat akin to belladonna. It is of real value in coryza and meningeal irritation, but

there is little reason for expecting anything more from it, in most cases, than is accomplished by belladonna.

SOLIDAGO VIRGAUREA, *Golden Rod*. A diuretic of value in ascites, due to cirrhosis of the liver, and in cardiac dropsy. Bright's disease is oftentimes favorably influenced by small doses. Administer from 1 to 8 fʒ of the f.e. during the twenty-four hours according to amount of diuresis demanded. An infusion of the flowering herb may also be used.

SPARTEINÆ SULPHAS. This alkaloidal salt is valuable in functional and organic heart disease, and especially so where digitalis fails or is contraindicated. In the irregular heart following grippe and marked by muscular weakness, it is very effective. It is potent as a diuretic, and is used in albuminuria. The average dose is 1-5 gr., but it may be used hypodermically in doses of 1-10 to $\frac{1}{4}$ gr. Here it is of value in meeting the depression incident to the breaking off of drug habits.

SPIGELIA, *Pink Root*. In large doses (f.e., 1 to 2 fʒ for adults; for children, 10 to 20 m) spigelia is a powerful anthelmintic, but must be used with care, since it is decidedly narcotic and excites the circulation. Combined with senna, it is highly efficient in removing lumbracoid worms.

In small doses (tr. or 0, 5 m) it is suggested in neuralgia of the fifth nerve, neuralgic heart affections, pericarditis, and rheumatic endocarditis, but has no established place in therapeutics. Its physiologic action would warrant using it in these difficulties.

SPIRITS, U. S. P. *Spiritus Ätheris* ($32\frac{1}{2}\%$), an analgesic and antispasmodic. Dose, 60 m. *Ätheris comp.* ($32\frac{1}{2}\%$ ether, $2\frac{1}{2}\%$ ethereal oil), "Hoffman's Anodyne." Dose, 60 m. *Ätheris nitrosi* (4% ethyl nitrite), diu-

retic, diaphoretic, antispasmodic. Average dose, 30 mL . *Ammonia* (10%), stimulant and antispasmodic. Average dose, 15 mL . *Ammonia aromaticus* (3 4-10% ammon. carb., 9% ammon. water). Dose, 30 mL . *Amygdalæ amarae* (1%), cough sedative. Dose, 8 mL . *Anisi* (10%), aromatic and carminative. Dose, 15 to 60 mL . *Aurantii comp.* (orange peel, lemon, coriander, anise), a flavor. *Camphoræ* (10%). Average dose, 15 mL . *Chloroformi* (6%). Average dose, 30 mL . *Cinnamomi* (10%). Dose, 10 to 40 mL . *Gaultheriae* (5% true oil). Average dose, 30 mL . *Glycylis nitratis* (1% nitroglycerine). Average dose, 1 mL . *Juniperi* (5%), diuretic in 30 mL doses. *Juniperi comp.* (juniper, fennel, caraway). Average dose, 2 f3. *Lavandulæ* (5%), carminative, stimulant, aromatic. Average dose, 30 mL . *Menthæ piperitæ* (10%), carminative, stomachic. Average dose, 30 mL . *Menthæ viridis* (10%), carminative, stimulant. Average dose, 30 mL .

SPONGIA TOSTA, Roasted Turkish Sponge. Early in the nineteenth century Girtanner used burnt sponge in the treatment of venereal ulcers of the throat. This contains iodine, bromine, potash, magnesia, and lime salts, and in our books of not many years ago was highly commended. After a time it fell into disuse in regular medicine, but the homœopaths make a strong tincture of it, which they quite unnecessarily dilute and use in croup, throat affections, difficult breathing, and many glandular affections in the 2x and 3x.

Adequate personal experience with the tincture leads me to say that it is probably the best form in which to give small doses of iodine. Its action is similar to the iodized lime so aggressively pushed by the alkaloidal enthusiasts as a remedy in certain types of croup. It is a good remedy, and so also is tincture of burnt sponge. Recently, some of the throat specialists have revived the

use of burnt sponge. In doses of 5 to 30 drops of the tincture a pretty prompt manifestation of the effects of iodine can be secured and with very little irritation, and I am inclined to think that the total medicinal content of burnt sponge, as naturally associated, is less irritating and more useful than the separated iodine in the treatment of glandular and throat troubles. This tincture is of very similar composition to the analyses given of the inorganic salts and bases in cod-liver oil, and I have used it to iodize nutritive oils, such as olive oil and peanut oil, and have had very good therapeutic results from them.

STANNUM, Tin. The homœopaths claim that triturations of the precipitated metal are useful in debility associated with chronic bronchial and pulmonary conditions marked by mucopurulent discharges. They also use it in spasmodic and paralytic conditions, neuritis, and typewriters' paralysis. The 3x to 6x is used, with what results I cannot state, having never used it in any form.

STAPHISAGRIA, Stavesacre. *In large doses* is an emetic, cathartic, and narcotic, rather unsafe in use. *In small doses* (f.e. or ec. tr., 1-5 to 1 M) it is a stimulant tonic to the nervous system, of value in melancholic and hysterical conditions, but its chief value is as a soothing agent upon the genito-urinary organs. It has considerable reputation in irritation of the prostate, testicles, and vesiculæ seminales, arresting mucopurulent discharges, such as gleet. Nocturnal emissions in nervous and anemic men and incomplete urethral evacuations are relieved by it. The homœopaths employ it in recurrent styes, salivation, and crural neuralgia, as well as in "sexual sins."

The ec. tr. contains the fixed oil of the seed, and makes a milky admixture with water. Most tinctures are made of seed from which this oil has been expressed. The contention has been made, but not well sustained, that

the oil possesses therapeutic value. Equal parts of the fluidextract and cologne water are used to destroy pediculus pubis and p. capititis.

It must not be forgotten that staphisagria is very poisonous, and its preparations must be used with care and discrimination. In my own experience, fairly good results have been obtained from small doses of the drug.

STICTA PULMONARIA, *Lungwort*, a lichen found growing upon rocks and trunks of old trees. Possesses a sedative action upon the vagus, lessening irritation and controlling cough with pain in the occipital region and between the scapulae and in the respiratory muscles. It is used in short, hacking coughs, and in influenza with irritating catarrhal discharges. In hay fever it has given me better results than has any other internal remedy. Many cases yield to its influence promptly, and are markedly relieved, while others take pretty full doses. Dose, ec. tr., $\frac{1}{2}$ to 10 m; @, 2 to 30 m.

STIGMATA MAYDIS. See Zea.

STILLINGIA, *Queen's Root*. In large doses is emetic and cathartic, causing gastro-enteric irritation and prostration. Pharmaceutically, stillingia presents the difficulty of the red tannates, and its preparations are liable to be either inert or to readily disintegrate. While the dried root is active, the recent root is far preferable. The present writer has used stillingia very largely, and believes a decoction of the recently dried root to be a most potent vegetable alterative. Several makes of f.e. and the ec. tr. and N. F. tr. are reliable, but the U. S. P. average dose of 30 m is too high when reliable preparations are used. One-third of this amount is quite effective, and may be long continued without irritation. To me it is exceedingly annoying that the revisers of the U. S. P. do not take more into consideration the many statements

in the U. S. and National Dispensatories as to the differences between recent and old herbs and roots. A great many instances are noted in these most excellent works where long-continued drying is deleterious to or ruins the drug. Stillingia is an instance. As a matter of fact, when we write for fluidextract of stillingia, U. S. P., it is purely a guess whether we will get an active drug or an inert mess. There exists not one scientific reason why the U. S. P. should ignore the chemical and botanical data of the dispensaries. It is certainly to be hoped that the U. S. P. preparations of the large class of drugs, of which stillingia is a type, will, at the next revision, be placed upon some reasonable basis of requirements as to the state of the crude drug.

Physicians who have never properly exhibited stillingia have little idea of its great value. *In small doses*, long administered, we have a remedy in secondary syphilis, scrofula, lymphatic and glandular troubles, and chronic skin and throat troubles truly second only to the iodides.

STRAMONIUM, *Thornapple* or *Jimson Weed*. *In large doses* (f.e. [assayed] of leaves, 2 to 5 m; of seed, 2 to 4 m) a potent antispasmodic and anodyne, similar in influence to belladonna, but preferred in asthmatic attacks. It does not act so well as does belladonna in inflammatory and febrile states. In spasmodic asthma, 10 to 20 gr. of the dried leaves may be smoked in a pipe. It can be used in large doses in mania and convulsions, dysmenorrhea, chorea, and hydrophobia, but is inferior to other agents.

In small doses (f.e. or ec. tr., $\frac{1}{4}$ to 1 m) it is a good cough sedative, is employed in retention of urine from spasm of the neck of the bladder, and in various conditions of brain irritation and sexual excitement. Small doses are said to remove the globus hystericus and to relieve muscular tremblings of functional or reflex origin.

An ointment composed of 1 part opium, 4 parts extract of stramonium, and 16 parts of vaseline is used in rheumatism, hemorrhoids, glandular swellings, and painful areas. Fresh leaves stewed in lard make an excellent ointment. *Daturine* has no well-established chemical identity, being usually a mixture of alkaloids. Atropine is similar in action, and much more reliable.

STRONTII BROMIDUM. This most excellent drug is now official, and is distinctly less irritating than is potassium bromide. It is nerve sedative, while its influence upon circulation and the gastro-intestinal tract is most kindly. Germain-Sée highly commends it in fermentative dyspepsia. It is also employed in nephritis. Average dose, 15 gr. The CARBONATE is employed in very small doses by the homœopaths in affections of the bones and joints associated with or caused by rheumatism and sprains. The IODIDE is official, and is used like potassium iodide. The LACTATE is highly commended in albuminuria in 5 to 15 gr. doses. The SALICYLATE is official, and the average dose is 15 gr. Strontium salts promise to largely displace the much more irritating salts of potassium.

STROPHANTHINUM, *Strophanthin*. A glucoside, or mixture of glucosides, obtained from strophanthus. A very toxic agent, to be handled with great care. Its average dose is stated in the U. S. P. to be 1-200 gr. Some authorities state it much lower. The 1-500 gr. granules are probably the most convenient way to give the drug. When there is urgent need for a heart stimulant, from one to three of these granules may be given in hot water, and then use one or two every half hour to two hours, according to urgency. It is not diuretic, and can be classed as a heart irritant. It is seldom wise to administer it for long periods.

STROPHANTHUS. This active agent is of value if used with discrimination, but a few cautions are advisable. Do not prescribe the tincture in an aqueous medium, since the glucoside is precipitated. As it is customary to have patients use so many drops in water, it is the best plan to use the U. S. P. tincture and not the fluidextract or eclectic tincture. The tincture is double its former strength, and the average dose is 8 mL . It is seldom advisable to exceed 15 or 20 mL . Remember that strophanthus acts directly upon the heart muscle, increasing the systole and slowing the pulse without vasomotor effects. It is contraindicated in active hyperemia, visceral hemorrhages, vasomotor disturbances, and the ascites of tumors.

Give strophanthus when the heart muscle is weak and the pulse rapid without pyrexia. It is indicated in valvular lesions incident to muscular weakness and in dyspnea. Persistent anemia, due to a weak heart, and acute anemia following uterine hemorrhage, are aided, and oftentimes most materially benefited, by strophanthus.

In small doses (tr., 1 to 3 mL) it is useful in the irritable heart of tobacco smokers in arteriosclerosis. In exophthalmic goitre it has been highly commended. Begin with small doses and run up to 8 or 10 drops. Some cases of urticaria yield to a similar course of treatment.

STRYCHNINA. The alkaloid and its nitrate and sulphate are official. The average dose of each one is 1-64 gr., but may be used, cautiously, up to 1-20 gr. Under twelve years of age from 1-200 to 1-60 gr. It is best given hypodermically when used as a stimulant to the respiratory centres and in the embarrassed breathing of pneumonia, as well as in its employment to arrest progressive muscular atrophy. In general, its action is along the lines of nux vomica (q. v.), and is employed in general and local paralyses, in neuralgia, impotence, neurasthenia, de-

ficient peristalsis, and as a cardiac and general tonic. When the effects of minute doses are desired, it is best to use nux vomica or ignatia as a rule. This is especially true of visceral and hysterical troubles. The homœopathic indications for strychnia do not "pan out" in practice, but they employ some unusual and really very useful salts. The 2x tablet triturates of strychnium phosphoricum are excellent in spinal anemia, and the 3x in the anemia of pregnancy. Strych. arsenicum 3x is used very rationally in chronic diarrhea with paralytic symptoms. The alkaloidalists make most excellent 1-134 gr. granules of this salt. It antagonizes vasomotor paralysis, is a superb tonic, and strengthens the heart nicely in septic and malarial fevers. Strych. et ferri cit., in 2x triturates, are used in chlorotic and paralytic conditions, and in dyspepsia with vomiting. Strych. valerianate in 2x triturates are used in exhaustion of brain power and with women of high nervous erethism. Of the official preparations, the alkaloid and the sulphate are similarly employed, while the nitrate is preferred in dipsomania.

SULPHONETHYLMETHANUM. See Trional.

SULPHOMETHANUM. See Sulfonal.

SULFONAL. A coal-tar hypnotic that, in my judgment, should be rarely used, but it does possess a place in the insomnia of alcoholics and certain types of insanity. Give from 15 to 30 gr. in hot water two or three hours before sleep is desired, but do not be alarmed if its action is somewhat erratic or some disagreeable symptoms arise. The fact that it is tasteless renders it eligible in some cases, but in general it is a rather unreliable drug.

SULPHUR, *Lotum* or *Washed S.* and *S. Præcipitatum* are identical in effects and are classed as alterative, laxative, and antiparasitic. *S. Sublimatum* is rarely used as

a laxative, but excels in local skin affections. *Sulphuris iodidum* acts largely as sulphur, and the dose is 1 to 4 gr. It is not a very stable chemical.

In large doses (30 to 120 gr.) sulphur has been very unwise used. In the system it is subject to so many chemical changes as to be unreliable in action, and its protracted administration causes anemia, muscular weakness, torpor of the venous capillaries, boils, and skin rashes. Externally, it has many uses, especially in scabies, and, as a lotion, in acne and other skin diseases; but internally, beyond a dose or two for its laxative effect, I believe it does vastly more harm than good in the large dose.

In small dose it is an open question just how much of a place sulphur should fill. The homœopaths make very extensive use of it in scrofulous indurations, mucous catarrhs, ulcerations, complaints that relapse, suppurating skin lesions, and diseases characterized by inertia and relaxation of tissue. They claim that minute doses promote resolution of pneumonic hepatization and relieve venous capillary stagnation, but they cloud the subject with a maze of subjective symptomatology verging upon the ridiculous. My own experience with their 1x and 2x triturations leads me to say that while they will do very little in most conditions they designate, yet I have gotten better results with them in skin diseases than I have with the crude drug.

SUMBUL, Musk Root. This is a drug borrowed from the sectarians and much overexploited by certain manufacturers. It is used in nervine and antispasmodic mixtures with apparent success, but how much of the result is due to the sumbul and how much to the well-established agents incorporated with it is an open question. Musk or sumbul in an aromatic wine will make an impression-

able woman feel "perfectly lovely." So will rose-water in wine. The dose of the fluidextract is 30 ml.

SYRUPS, official and non-official, are so numerous and present no especial points of differentiation from the oils, tinctures, and fluidextracts or the chemical substances entering into them, so we will not enter into details concerning them. The general tendency is to limit their use, since they are cumbersome and the sugar is seldom relished by sick persons, and usually deranges the stomach. The syrup of the iodide of iron is an exception to the general rule that syrups are unnecessary in that the sugar in this syrup acts as a preventive of chemical destructive changes. Emetics, such as ipecac, squill, and sanguinaria, may at times be given with advantage in syrup, and syrups of the hypophosphites and other agents taken by persons engaged in their daily labor and capable of properly digesting the sugar may fill a useful place in therapeutics.

TANACETUM VULGARE, *Tansy*. Tonic, anthelmintic, and diaphoretic, employed in flatulent dyspepsia, jaundice, and worms. The hot infusion is employed in dysmenorrhea and to prevent the paroxysms of gout. Dose, f.e., 20 to 60 ml.

TARAXACUM, *Dandelion*. Tonic, alterative, diuretic, and mildly laxative. Employed, usually in combination, in chronic functional liver derangements and cutaneous derangements due thereto. (F.e., 1 to 2 flz.)

TEREBENUM. A mixture of hydrocarbons derived by the action of acid upon turpentine. It is expectorant, antiseptic, and antifermentative; used in chronic bronchitis, flatulent dyspepsia, and genito-urinary diseases. Dose, 4 to 20 ml on sugar. Externally, in 1% solution, in uterine cancer and gangrene.

TEREBINTHINA, *Turpentine*. A valuable stimulant, hemostatic, anthelmintic, antiseptic, and counterirritant. Best exhibited in gelatine capsules and emulsion.

In large doses ($\text{f}3\text{i}$ to $\text{f}3\text{iv}$) it is a reliable anthelmintic, and is used in conjunction with castor oil when first arising in the morning.

In small doses (1 to 10 m) a valuable stimulant in low fevers, used when the tongue is dry and red, the pulse feeble, tympanites, and the mind wandering. Give 5 m doses every three hours, and if hemorrhage, 10 m doses. Small doses are effective as a diuretic in atonic states of the genito-urinary tract. Fifteen m each of turpentine and sulphuric ether, in capsules, are given in biliary calculi. In strangury, with bloody urine, give quite small doses. In typhoid, I like an emulsion made by mixing 2 f3 of turpentine with 1 3 of castor oil, and rubbing up with 3 3 each of powdered acacia and white sugar and enough peppermint water to make a 4 3 mixture. Shake well, and give 1 or 2 teaspoonfuls every three hours. Turpentine is given in case of trichina spiralis, in small and persistent doses, and in the subacute stage of dysentery, in quite small doses. One m doses do well with children where the trouble is due to the formation of lactic and butyric acids.

Locally, turpentine stypes, turpentine in olive oil (10 to 25%), and inhalations of the vapor from hot water and turpentine have a wide range of utility. *Chian turpentine* is applied to cancerous growths. *Canada turpentine*, or "balsam of fir," is a liquid oleoresin, and is sometimes used in pill form.

TERPINI HYDRAS. *In large doses* (10 to 15 gr.) is diuretic. Give in pills or capsules. As a diuretic, it is rather irritating. *In small doses* (1 to 3 gr.) it enters into a number of elixirs used in bronchitis, cystitis, etc.

THEOBROMINE. An alkaloid from theobroma cacao and possessing diuretic properties in 5 to 15 gr. doses. Secondarily, it is a mild nerve stimulant. Merck makes a *salicylate* of theobromine that is a valuable diuretic and genito-urinary antiseptic. Dose, 15 gr.

THLASPI BURSA PASTORIS, Capsella. *In large doses* (f.e. or ec. tr., $\frac{1}{4}$ to 1 f3) is hemostatic and antiscorbutic, and is used in chronic diarrhea and passive hemorrhage.

In small doses (0, 3 to 5 m) the homeopaths esteem it highly in renal and vesical irritation as a soothing diuretic. Where uric acid or insoluble phosphates or carbonates produce irritation of the urinary tract, they use it. Also in albuminuria during gestation. From pretty adequate testimony their use of the green plant mother tincture in this class of affections seems to be well sustained by the results.

THUJA OCCIDENTALIS, Arbor Vitæ. The ec. tr. is alcoholic, but free from extractives and suitable for surgical use. Aqueous thuja contains the astringent but none of the oily and resinous principles. Long's thuja contains no alcohol. Oil of thuja is a colorless, campohraceous body destitute of astringency.

Internally, thuja is a terebinthinate. The oil is most too irritating for internal use. The ec. tr. is used in affections of the mucous tracts, especially dribbling of urine in the aged, enuresis of children, vesical atony, suppressed gonorrhea, and gonorrhreal rheumatism. (Ec. tr. in doses of 3 to 15 drops.) Not very miscible with water.

Locally, thuja is very valuable in many conditions, but the proper preparation (alcoholic, non-alcoholic, etc.) *must* be used, or failure, if not great pain, will result. Fungoid granulations, fistulous openings, gangrene, papillomata, condylomata, venereal warts, hemorrhage from malignant growths, bleeding moles, purpura hemorrhag-

gica, umbilical hemorrhage, bulging nevi, small, soft chancres, ulcerations upon uterine os, fissures, ptyalism, urethral carbuncles, syphilitic psoriasis, and many other conditions are treated by ec. tr., full strength, if upon the skin or directly upon warts or granulations. Upon mucous membranes or excoriated surfaces, 1-5 to full strength. Usually diluted with glycerine. In hydrocele, mix 1 3 each of ec. tr. and warm water. Insert a *large* exploring needle into sac, and permit serous fluid to escape. Now inject through the needle, by means of a small syringe, the 2 f3 of the diluted ec. tr., and knead scrotum vigorously. Withdraw needle. For a half hour or so the pain is pretty severe, but a cure usually results. In hernia, the same solution, or even full strength ($\frac{1}{2}$ f3 every two weeks) is injected into the rings. Practice rigid asepsis in all injections, and be cautious.

In trachoma, pass wetted alum pencil over the everted lid (lightly), dry parts, and apply an ointment made of Long's thuja, 1 part, and vaseline, 3 to 8 parts. Aqueous thuja ($\frac{1}{2}$ strength) may also be used. Further diluted, it is used in pterygium with conjunctivitis. In general, the aqueous thuja is preferable upon sensitive membranes, as in granular urethritis and catarrhal conditions of the mucous channels, or in nasal polypi, gonorrhea, granulated cervix, mucous patches in vagina and throat, and in fistula (1 part in 6, up to full strength). Thuja cerate (25%) is used in old skin troubles.

THYMOL. *In large doses* (10 to 30 gr.) a powerful anthelmintic of great value in "hook worm disease" and nematod infections of intestinal tract generally. Smaller doses destroy the filaria sanguinis hominis as found in chyluria. *In small doses* (1 to 3 gr.) it is antiseptic, and used in gastric fermentation. Locally, it is a pleasant antiseptic, used in nasal catarrh and in washes, gargles,

and spraying solutions. Unfortunately, it is rather expensive and also attracts flies, which will not do in surgery.

THYMOLIS IODIDUM. See Aristol.

TOLU. A mild expectorant, stimulant to the bronchial mucous membranes. It is seldom used alone, but the syrup carries nicely and promotes the action of more positive expectorants. The dispensing physician will find the "soluble fluid tolu" useful in compounding the syrup or extemporaneous mixtures.

TONGA, *Premna Taitensis*. The fluidextract, in 30 to 60 m doses, has given good results in the treatment of neuralgia.

TONGO, Tonka Bean, *Dipterix odorata*. Used as a flavoring agent. Possesses very mild anodyne properties taken advantage of in making up mixtures for whooping cough.

TRIFOLIUM PRATENSE, Red Clover. The fluidextract of the blossoms, in 30 m doses, is alterative and used largely in combination with other agents. It is reputed to be of value in the cancerous diathesis. In doses of 10 m it is used in spasmodic coughs, whooping cough, and hay fever. The agent has been pushed largely by the proprietary interests, who have derived their data concerning it largely from homœopathic sources. It is of moderate utility.

TRIONAL. A synthetic derived from another synthetic (sulfonal). A hypnotic and nerve sedative. Does not relieve pain. Average dose, 15 gr. In my experience, it is a very unreliable agent, and just about as uncertain in action as sulfonal and tetroxal.

TRITICUM REPENS, Couch Grass. A soothing diuretic,

increasing the flow of the watery portion of the urine. It is of positive value when the urine is dense and causes irritation of the mucous surfaces. Since it is non-irritating and entirely harmless, it can be given freely in irritable bladder, dysuria, cystitis, gonorrhea, lithemia, prostatitis, and many other conditions. (F.e. or ec. tr., 10 to 60 ml.)

TRITURATIONS. What might be called ix triturations are now official. Elaterin is the only specific drug thus far designated in the U. S. P., but several enterprising manufacturers very wisely list a great many triturations.

TROCHISCI, *Acidi Tannici*, U. S. P. (1 gr.), astringent in throat troubles. *Ammonii chloridi* ($1\frac{1}{2}$ gr.), expectorant. *Cubebæ* (3-10 gr.), in bronchial troubles and sore throat. *Gambir* (1 gr.), in mouth and throat inflammations. *Glycyrrhizæ et opii* (Wistar's lozenges, 1-12 gr. opium), in cough. *Krameriae* (1 gr.), in mouth and throat inflammations. *Potassi chloratis* ($2\frac{1}{2}$ gr.), aphæ. *Santonini* ($\frac{1}{2}$ gr.). Dose, 1 or 2 with a laxative. *Sodii bicarbonatis* ($4\frac{1}{2}$ gr.), antacid.

TUBERCULIN (Koch), a glycerine extract of pure cultures of tubercle bacillus. Used in diagnosis. Dose, 1-12 to 1-6 gr. subcutaneously, once, in 0.8% salt solution; or four doses at intervals of three to seven days, giving, respectively, 1-128 gr., 1-32 gr., 1-12 gr., 1-6 gr. The reaction raises temperature $1\frac{1}{2}$ to 2 degrees. The "New Tuberculin" is used as a remedy in lupus and phthisis. Homœopathic writers assert that minute doses are very valuable in the treatment of broncho-pneumonia. *Aviaire*, tuberculin from birds, is asserted to be useful in influenzal bronchitis, and, homœopathically, a solution of the third centesimal potency is injected, or the 30x given internally. *Bacillinum* is made from tubercular

nodules, and is an attenuation of the toxines found therein. It is asserted to be of value in incipient tuberculosis in infrequent doses. The whole subject is in a somewhat nebulous state as yet, but doubtless some one or more of these substances will ultimately prove to be of real value.

UNGUENTUM; ACIDI BORICI (10%). *Acidi tannici* (20%). *Belladonnae* (10%). *Chrysarobin* (6%), anti-parasitic. Too toxic to use upon large surfaces. *Diachylon*, or lead plaster (50%), astringent and dermic. *Gallæ* (20%), astringent in piles, prolapsus ani, flabby ulcers, etc. *Hydrargyri* (50%). The U. S. P. preparation is inferior to that made by Squibb by mechanical means. Antisyphilitic, discutient, and antiparasitic. Dose (by induction), 1 3. *Hydrargyri ammoniata* (10%). *Hydrargyri dilutum* (mercurial ointment, 67%). *Hydrargyri nitratis*, or "citrine ointment" (mercury, 7%; nitric acid, 17½%). *Hydrargyri oxidi flavum* (10%), and *Oxidi rubri* (10%), are used in diseases of the eyelids and in indolent ulcers. *Iodi* (4%). *Iodoformi* (10%). *Phenolis* (3%). *Picis liquidæ* (50%). *Potassi iodidi* (10%). *Stramonii* (10%). *Sulphuris* (15%). *Vera-trinæ* (4%). Use carefully, as it is very toxic. *Zinci oxidi* (20%). *Zinci stearatis* (50%).

PRINCIPAL HOMOEOPATHIC CERATES. Most of them are made 25% of the strength of the plant. *Rhus toxicodendron* is made much weaker. *Aconite*, in inflammation and pain. *Æsculus*, in piles. *Arnica*, sprains and bruises. *Bryonia*, rheumatism and pleurisy. *Calendula*, antiseptic and healing. *Carrot*, in deep burns. *Eucalyptus*, an anti-septic. *Graphites*, sore nipples and fissured sores. Quite useful. *Hamamelis*, piles, burns, inflammations, etc. *Hypericum*, penetrating and painful wounds. *Hydrastis*, catarrhal conditions of mucous surfaces. *Iris*, in tinea capitis. *Phytolacca*, in glandular inflammation before

suppuration takes place. A very valuable application in induration and congestion of mammary gland. *Plantago*, another excellent cerate of use in poisonous and malignant inflammation, ulcerations, pruritis, and phlegmonous erysipelas. *Rhus tox*, in rheumatism of joints, but must be used with great care. *Stramonium* (50%), in inflamed hemorrhoids. *Thuja*, in old sores, salt rheum, warts, and pimply eruptions. Homœopathic cerates are very active, being made from the green plants. Their ointments made from chemicals are quite similar to our own.

UPAS TIENTE, *Upas Tree*. This very poisonous plant is used in sectarian practice, but has no advantages to recommend it over other agents. Large doses produce tonic spasms and asphyxia. Small doses are a nerve and sexual tonic (3x).

URANIUM NITRATE. The 2x is esteemed in diabetes, gastro-intestinal ulceration, and chronic diseases of the liver. In the "made in Germany" regular practice, it is used for similar indications, but in doses of 1 gr., gradually increased.

URETHANE. A hypnotic, in doses of 30 gr. Sedative, in doses of 5 to 15 gr. It is moderately effective, and safer than most synthetic hypnotics.

URTICA URENS, *Stinging Nettle*. The 0, in 5 drop doses, is used in agalactia, and is said to give good results.

USTILAGO MAYDIS, *Corn Smut*. The contention is made that corn ergot has similar actions upon the central nervous and capillary systems to the ergot of rye, but produces its action more regularly and safely and has the advantages of rye ergot in labor and post-partum hemorrhage without the disadvantages. A more conserv-

ative view is that in chronic uterine hemorrhages; and when there is uterine inertia before delivery, it is superior to rye ergot, but not in active hemorrhage, or for the indications in small doses. (See Ergot.) A few makers of fluidextracts list *ustilago*. (F.e. or ec. tr., 5 to 30 ml.)

UVA URSI, Bearberry. An astringent diuretic, useful in relaxed states of the bladder walls and where mucous discharges are, profuse. It is employed in ulceration of the bladder wall, cystitis, pyelitis, diabetes, and in urinary calculi. (F.e., 10 to 60 ml.)

VALERIANA. A gentle nerve stimulant, useful when the face is pale and the skin cool, in hysterical conditions, and nervous excitement. Employed in nervousness with depression, hysteria, hypochondria, the restlessness of fever, and mild, spasmodic affections. (Tr., 1 f3 to 2 f3; f.e. or ec. tr., 30 ml.)

VERATRINA. Derived from *asagrœa*. Cardiac depressant and analgesic. Dose, 1-30 gr. A good drug to let alone. Externally, 2 to 4% ointments are used, but they are dangerous. See "Sabadilla."

VERATRUM ALBUM, White Hellebore. An exceedingly toxic vasomotor depressant employed occasionally as a cardiac depressant, in doses of 1 to 3 ml of the fluidextract. *Veratrum viride* is much safer, and there is really no good reason to employ white hellebore when the former agent is available. See the following article, "Veratrum."

VERATRUM. The U. S. P. veratrum is either *veratrum album* or *veratrum viride*. In order to give reliable information herein and endeavor to solve the problem why the revisers class these two agents as practically one, I read up a dozen authorities, and infer that as recent in-

vestigators declare that the two plants are of similar alkaloidal content, the revisers accepted these conclusions as final and the plants identical. In my humble opinion, the history of the investigations of these two plants has always been so involved as to the alkaloidal content and the conclusions of equally able chemists so contradictory as to render it a very rash proceeding to base the therapy of such toxic agents upon them.

As a matter of fact, a good deal of veratrum album grown in high, mountainous regions is very similar to veratrum viride, but the plant varies according to its habitat. Our source of supply is Europe, and we get very dry and uncertain crude white hellebore from there as a rule. Until the U. S. P. veratrum preparations are upon a much more scientific basis than at present, or until assay methods are devised that really determine something tangible about these complex drugs, it is best to not use the U. S. P. veratrum at all. I say this regretfully and against the statements of excellent authorities, but I have used a good deal of veratrum upon sick people, and that is the real test and punches holes in considerable theory and laboratory data. Read the dispensatories of a few years back upon veratrum album, with the marked cautions given therein, and you will appreciate my point of view. See "Veratrum Viride."

VERATRUM VIRIDE, *American Hellebore*. Toxic doses depress the circulation and respiration and produce coma and incessant vomiting. While not apt to lead to fatal results, veratrum viride must be used with great care, since it may cause death by asphyxia. Never push beyond slight nausea, and rarely to that point. The action of the drug is prompt, and should be given in doses not over two hours apart, and the patient be rigidly kept in the recumbent position when full doses are administered.

It is contraindicated in valvular heart lesions and in asthenic states.

Pharmaceutically, it is hard to work. Green root tinctures are apt to be slimy and weak. The recently dried root is fully effective. The Norwood's tincture is thoroughly reliable. The ℥ is excellent if sufficiently large doses are given. Squibb's tincture veratrum viride can be depended upon. The ec. tr. is a high-grade fluidextract made of partially dried root, and is probably not so concentrated as to alkaloidal constituents as are fluidextracts from dry but recent root. The numerous alkaloids derived from veratrum viride have no established place in therapeutics.

In large doses it is of decided value *only in puerperal convulsions*. It is apparently harmless in quite large doses in this condition. Give 10 ml ec. tr., or 8 ml f.e., or, hypodermically, 6 to 8 ml ec. tr. According to conditions, repeat with doses half as large. In one aggravated case I gave 30 ml ec. tr. within two hours, but such heroic doses are rarely safe, although as high as 10 ml hypodermically every fifteen minutes, to effect, have been suggested. The hypo. is really seldom necessary, since veratrum is so prompt in action. *Be very cautious with these large doses.*

In small doses it is used to slow the pulse when it is full, strong, and large, viz.: in sthenic states. It is indicated in many conditions, such as erysipelas, malignant types of scarlet fever and diphtheria, sciatica, uremic convulsions, exophthalmic goitre, determination of blood to the brain, acute pneumonia, acute tonsilitis, peritonitis, meningitis, some cases of cardiac hypertrophy, acute rheumatism, and *sthenic inflammations generally when patient is in bed and stays there*. Do not give to persons who are asthenic or to those who are up and about. (F.e.)

or ec. tr., 1-5 to 2 ℥ every half hour to two hours. Tinctures, 1 to 15 ℥.) The small dose is safe and effective within its indications, but 1 ℥ f.e., or 10 ℥ tr., is seldom to be exceeded in this connection.

VERBASCUM, Mullein. Demulcent, mildly diuretic, anodyne, and antispasmodic; used in bronchial irritation, cystitis, diarrhea, and hemorrhoids. (F.e. root or ec. tr., 15 to 60 ℥.) For its use in deafness and ear troubles, see "Mullein Oil," which is said to influence the inferior maxillary branch of the fifth pair of the cranial nerves as well as the ear, and to be valuable in neuralgias of parts so supplied.

VERBENA HASTATA, Vervain, is employed by a few physicians, who commend it in intermittent fever, vesicular erysipelas, and epilepsy (rather diverse conditions), but there is little evidence of its value.

VIBURNUM OPULUS, Cramp Bark. Tonic, antispasmodic, and alterative. It is indicated in cramps, spasmodic uterine pain, "bearing-down pain," spasmody dysmenorrhea, spasm of sphincters, and as an antiabortive agent. (Ec. tr. or f.e., 10 to 30 ℥.) The larger doses commonly suggested are not one bit more effective. It coöperates nicely with gelsemium and cimicifuga.

VIBURNUM PRUNIFOLIUM, Black Haw. This valuable drug is the best agent we have for irritable states of the womb in nervous patients, being especially indicated in a chronic disposition to miscarry. Give regularly for six weeks before the time when this event usually occurs. It controls after-pains and promotes uterine involution. Black haw relieves the gastric discomfort following alcoholic indulgence. (F.e. or ec. tr., 10 to 60 ℥.)

VINUM; ANTIMONII ($\frac{1}{4}$ gr. tart. emet. in 1 fl.). Cocæ (f.e., 6 $\frac{1}{4}$ %). Dose, 4 fl. *Colchici seminis* (f.e., 10%).

Average dose, 30 m. *Ergotæ* (f.e., 20%). *Ferri* (4% fe. et am. cit.). *Ferri amarum* (5% fe. et quin. cit.). *Ipecac* (f.e., 10%). *Opii* (10%). Average dose, 8 m.

VIOLA ODORATA. Small doses \ominus are used in supra-orbital pain, choroiditis, and otorrhea. *Viola pedata* has some reputation as an alterative.

WATERS, MEDICATED, U. S. P. *Aqua ammoniae* (10%). Average dose, 15 m. *Ammoniae fortior* (28%). *Amygdalæ amaræ* (0.1%). Dose, 1 f3. *Anisi* (0.2%). Dose, 4 f3. *Aurantii florum*, dose, 4 f3. *Aurantii florum fortior*, dose, 2 f3. *Camphoræ* (0.8%). Dose, 2 f3. *Chlori* (0.4%), disinfectant and zymotic. Average dose, 1 f3, well diluted. Externally, pure. *Chloroformi* ($\frac{1}{2}\%$). Dose, 4 f3. *Cinnamomi*, dose, 4 f3. *Creosoti*, dose, 2 f3. *Fænicula*, dose, 4 f3. *Hamamelidis*, dose, 2f3. *Hydrogenii dioxidi* (10 volumes oxygen), dose, 1 f3. *Menthæ piperitæ*, dose, 4 f3. *Menthæ viridis*, dose, 4 f3. *Rosæ*, dose, 4 f3. *Rosæ fortior*, dose, 2 f3.

XANTHIUM SPINOSUM, Cocklebur. A diuretic of use in passive hematuria, chronic cystitis, but more especially where gravelly deposits in the folds of the bladder cause irritation and an excess of mucus. (E.c. tr., 5 to 15 m.)

XANTHOXYLUM, Prickly Ash. Primarily a stimulant, and useful as such in many languid and debilitated states. Highly valuable to add stimulating properties to indicated remedies combined with it. (F.e., 10 to 60 m.)

YERBA DE LA FLECHA, Sapium. A new purgative and diuretic, pleasant to the taste, and effective in doses of 1 to 5 m of the fluidextract. Large doses are poisonous and highly dangerous. It has not been sufficiently studied to establish its range of safe employment.

YERBA SANTA, *Eriodictyon*. A tonic expectorant quite agreeable to the taste. Of value in chronic, subacute inflammations of bronchial mucous membranes, especially when the cough is dry. Dispensing physicians will do well to stock with the aromatic fluid yerba santa (four times strength of syrup), and use in doses of 15 to 30 m. One teaspoonful of the syrup masks the bitterness of 5 gr. quinine sulphate.

YOHIMBINUM, *Johimbin*. An aphrodisiac recently exploited for the cure of neurasthenic impotence. Use Merck's yohimbine in 1-10 gr. doses, or the homœopathic 1% solution in 10 drop doses. Hypodermic tablets contain 1-12 gr.

ZEA, *Corn Silk*. It is quite refreshing away on at the end of the alphabet in the U. S. P. to read: "The fresh styles and stigmas of zea mays." It is a wonder they did not designate the "*dried*." Probably, after the next two or three revisions eliminate nearly all our vegetable remedies except the ones containing poisonous alakloids, and, in process of years, the pendulum swings back, the then revisions will be full of fresh or green plant preparations.

Zea is really a valuable drug in inflammatory affections of the bladder, acute or chronic. It contains maizenic acid, which is a soothing antiseptic. It is especially valuable where intravesical decomposition of urine has given rise to irritation. Zea is a harmless, non-irritating, non-depressing, and yet highly efficient remedy. (F.e., 20 to 60 m.)

ZINC SALTS, *Zinci Acetas*, used externally as an astringent and antiseptic (2 to 5:1000 solution) in gonorrhœa, conjunctivitis, etc. Occasionally used as a nervine in $\frac{1}{2}$ to 2 gr. doses. Rademacher's solution is used in

5 m doses in water, three times a day, as a nerve tonic for persons under strain and losing sleep. *Bromidum*, employed in epilepsy, in 1 or 2 gr. doses, well diluted. *Carbonas præcipitatus*, a dermic, used in abrasions and in face powders. *Chloridum*, used externally as a caustic in nevi, exuberant granulation, and to cancerous growths. In solution, 1:1000, is used in gonorrhea and eye troubles; upon wounds, 1:100; tuberculous joints, 1:10. Internally in 1-10 gr. doses in epilepsy, chorea, etc. *Iodidum*, an alterative antiseptic, used in doses of 1 or 2 gr. *Metallicum*, a homœopathic triturate, used in 3x, in defective nerve vitality with impending paralysis, spinal affections, hypochondriasis, etc. *Oxidum*, an antispasmodic, anti-septic, and mild sedative, used in diarrhea, gastro-enteritis, gastralgia, etc., in doses of 1 to 5 gr. Externally, in 5 to 20% ointment, in skin diseases requiring desiccation and protection. The pure powder may also be used externally. *Phosphide*, a nerve tonic in 1-20 to $\frac{1}{4}$ gr. doses, and used homœopathically in neuralgias of head and face, brain fag, sleeplessness, etc. 2x and 3x triturations. *Phenolsulphonas*, or sulphocarbolate, an antiseptic astringent, used in $\frac{1}{2}$ to 1% solution externally, and in 1 to 3 gr. doses internally, in typhoid, diarrhea, etc. *Stearas*, an antiseptic dusting powder. *Sulphas*, an emetic, in 15 gr. doses. Externally, in $\frac{1}{2}$ to 2% solution, or 5 to 10% ointment as an astringent. The homœopaths use minute doses in muscular cramps and convulsive disorders. *Valleras*, an antispasmodic tonic used in nervous affections, neuralgia, and diabetes insipidus, in doses of 1 to 3 gr.

ZINGIBER, Ginger. A stimulant, diaphoretic, and an anodyne in gastric and intestinal pain. A teaspoonful of the tincture in a cup of hot water is a more valuable and certainly less harmful emergency stimulant than is whisky or brandy. Smaller doses (tr., 10 to 20 m) are

useful in flatulent colic and atonic gastric states. As a diaphoretic, it is used in the early stages of a cold with better results than with alcoholic stimulants. Give hot ginger tea and quinine, and cover warmly in bed.

A Request

DEAR DOCTOR :

No one can realize more fully than myself the deficiencies necessarily incident in the concrete results of any attempt to mingle our rational and physiological therapeutics with the involved literature and data of sectarianism and make a harmonious union of the whole. There is no doubt at all that many men will note more or less faulty statements in this book. It is my earnest desire to eliminate them from a second edition, should it be called for in course of time. Criticism is frankly solicited and will be appreciated.

Honestly believing in the principles of regular medicine, it is not to be expected that all sectarians will approve what I have endeavored to make moderate and reasonable views as to their own essential therapeutics; especially since this book is meant more as an answer than as a tribute to sectarianism. On the other hand, we regulars cannot afford to complacently ignore the earnest, painstaking work of anyone in the field of therapeutics, especially in view of its present rather unsatisfactory status. I would request that my colleagues indulge me somewhat in the rather trying position involved in the authorship of such a book as this, and that our sectarian friends will realize that no attempt is made to treat their data from their points of view.

To both regular and sectarian I would say that I will welcome definite and tangible data in criticism, but not the mere expression of prejudice. No one is qualified to condemn the usefulness of a drug, either in large or small doses, until he has personally used a *thoroughly representative preparation of that drug, strictly within its indications and in a number of clinical cases.*

I would appreciate the views of pharmacists and chemists. I do not favor polypharmacy and wish to explain that while a great many unimportant drugs are noted in these pages, they appear largely as a matter of reference. I rarely employ them except in cases to which more reliable medication has been unsuccessfully directed. But disease is a strange entity. Quinine will not cure all cases of malaria, nor mercury and the iodides all cases of syphilis. These intractable cases may promptly yield to relatively unimportant vegetable drugs. In this view of the case all reasonably effective drugs are important both in their pharmacy and in their therapeutics.

I wish to say that I have read up all the fads in therapeutics. Please do not send criticism based upon them. While there is more or less substantial basis in the claims of all of them, a small work cannot undertake their consideration.

Fraternally yours,

THOS. S. BLAIR

403 N. Second Street

INDEX OF REMEDIES

The drugs and preparations appearing in this book are, with few exceptions, given their official titles and appear in alphabetical order. Cross references are used where their importance justifies the use of space, but there are so many common, chemical, and botanical names, synonyms, and sectarian titles that they are gathered together in this index. Page numbers are not needed, as all indexed names appearing in bold type are found in their alphabetical order, while those in less conspicuous type are immediately followed by the title under which they are treated, placed in brackets, as, for instance:

Pilocarpus

Jaborandi (*Pilocarpus*)

Jimson weed (*Stramonium*)

Phenylis salicylis (*Salol*)

Rhus toxicodendron

Thus, **Pilocarpus** appears under its own title, while Jimson weed will be entered as **Stramonium**. Salts are not indexed. Sulphate of zinc appears under **Zinc salts**. Individual preparations are not indexed. Tinctures, fluidextracts, etc., are not indexed, but preparations having no uniform basis of strength are briefly noted in the text and are indexed as **Unguentum**, **Spirits**, etc., the U. S. P. ointments, for instance, all appearing under the one heading. Complicated chemical names, except U. S. P. titles, will not appear, nor will common names not generally in use.

Many drugs, doubtless of some utility, are not found here because of their having fallen into pretty general

disuse. On the other hand, some very inferior remedies are noted because in regular use in some school of medicine, and they appear as a matter of reference. No attempt is made to list the multitude of synthetics. U. S. P. agents used pharmaceutically only are not touched upon.

Abies	Oxalic (Ac. minor imp.)
Abrus precatorius (Jequity)	Phosphoricum
Acetanilide	Picricum
Acetous tinctures	Salicylicum
Acetphenetidinum (Phenacetin)	Sulphuricum (Ac. minor imp.)
Acidum:	Tannicum (Ac. minor imp.)
Aceticum (Acids of minor importance)	Tartaricum (Ac. minor imp.)
Arsenous (Arseni tri-oxidum)	Trichloraceticum (Ac. minor imp.)
Benzoicum	Acids of minor therapeutic importance.
Boricum	Aconitina
Camphoricum (Ac. of minor import.)	Aconitum
Carbolicum (Phenol)	Acorn kernels (<i>Quercus</i>)
Citricum (Ac. of minor import.)	Adonidin
Hydriodicum	Adonis vernalis
Hydrochloricum	Adrenalin
Hydrocyanicum (Ac. of minor import.)	Aesculus
Lacticum (Ac. of minor import.)	Aether (Ether)
Nitricum	Aethusa cynapium
Nitrohydrochloricum	Aethylis carbonas (Urethane)
(Ac. minor imp.)	Agaricin (<i>Agaricus</i>)
	Agaricus muscarius

- Ailanthus glandulosa**
Alder (Alnus)
Aletris farinosa
Allium cepa
Alnus rubra
Aloes
Aloin (Aloes)
Alumen
 American Hellebore (Veratrum vir.)
Ammonium Bromide
 Carbonate
 Chloride
 Iodide
 Valerianate
Amygdalus persica
Amyl nitrite
 Anemone (Pulsatilla)
Anhalonium
 Anthemis (Chamomilla)
Antimonii et pot. tart.
Antipyrin
Apiol
Apis mellifica
Apocynum cannabinum
Apomorphine
 Aquae (Waters, medicated)
 Arbor vitae (Thuja)
 Arbutus (Epigaea)
Argenti nitratas
Aristol
Arnica
 Arsenicum album (Arsenii trioxidum)
- Arsenic Bromide**
 Iodide
Arsenii trioxidum
 Arsenite of copper (Copper arsenite)
Artemisia pauciflora
 (Cina)
Asafoetida
Asclepias tuberosa
Aspidium
Aspidosperma (Quebracho)
 Atropine (Belladonna)
 Aurum (Gold)
Avena sativa
 Aviaire (Tuberculin)
Bacillinum (Tuberculin)
 Balm of Gilead (Populus candicans)
Balsam Peru
 Balsam tolutani (Tolu)
Baptisia tinctoria
Barosma (Buchu)
Baryta carbonate
 Muriate
 Bayberry (Myrica)
 Bearberry (Uva ursi)
 Bearsfoot (Polymnia)
 Bee virus (Apis mellifica)
Belladonna
 Benzosulphinidum (Saccharin)
Berberine
Berberis aquifolium

- Bismuth beta-naphtholate** **Butyl-chloral hydrate**
Subnitrate
Bitter broom (Parthenium)
Bitter candytuft (*Iberis*)
Bittersweet (*Dulcamara*)
Bitter wood (*Quassia*)
Blackberry (*Rubus*)
Black cohosh (*Cimicifuga*)
Black haw (*Viburnum prun.*)
Black lead (*Graphites*)
Black nightshade (*Solanum*)
Black snakeroot (*Cimicifuga*)
Blood-root (*Sanguinaria*)
Blue cohosh (*Caulophyllum*)
Blue flag (*Iris*)
Blue mass (*Mass*)
Boneset (*Eupatorium*)
Bromelin (*Pineapple*)
Bromine
Bromoform (*Bromine*)
Broom (*Scoparius*)
Bryonia alba
Buckeye (*Aesculus*)
Buchu
Bugleweed (*Lycopus*)
Burdock (*Lappa*)
Buttercup (*Ranunculus*)
Butternut (*Juglans*)
Cactus
Caffeine
Cajuput
Calabar bean (*Physostigma*)
Calcarea (*Calcium*)
Calcium salts
Calx (*Calcium*)
Calendula
Calomel (*Mercury*)
Calotropis
Caltha palustris
Cambogia (*Gamboge*)
Camphora
Canadian hemp (*Apocynum*)
Candytuft (*Iberis*)
Cannabis indica
Cantharidin (*Cantharis*)
Cantharis
Capsella (*Thlaspi bursa-pastoris*)
Capsicum
Carbolate of camphor (*Camphora*)
Carbo ligni
Caroba tree (*Jacaranda*)
"Caroid" (*Papaya*)
Cascara sagrada
Cataplasma kaolini (*Kao-lin*)
Catechu (*Gambir*)
Caulophyllum

- Causticum** Club moss (*Lycopodium*)
Ceanothus Cobalt
Cedron Coca
Celandine (*Chelidonium*) Cocainae
Ceratum (*Unguentum*) **Cocculus indicus**
Cereus (*Cactus*) **Coccus**
Cerii oxalas Cochineal (*Coccus*)
Cevadilla (*Sabadilla*) Cocklebur (*Xanthium*)
Chamomilla **Codeina**
Charcoal (*Carbo ligni*) **Cola** (*Kola*)
Chelidonium **Colchicine** (*Colchicum*)
Cherry laurel (*Laurocerasus*) **Colchicum**
Chimaphila **Collinsonia**
China (*Cinchona*) **Colocynthus**
Chinese sumach (*Ailanthus*) **Condurango**
Chionanthus virginica Cone flower (*Echinacea*)
Chloralamide (*Chloralformamidum*) Conicine (*Cicuta*)
Chloralformamidum Coniine (*Cicuta* and *Coumarinum*)
Chloral hydratum **Conium**
Chloroformum Convallamarin (*Convallaria*)
Christmas rose (*Helleborus*) **Convallaria**
Chrysarobinum **Copaiba**
Cicuta virosa **Copper salts**
Cicutine (*Cicuta*) Couch grass (*Triticum*)
Cimicifuga racemosa Cuprum (Copper)
Cina Corn silk (*Zea*)
Cinchona Corn smut (*Ustilago*)
Cineraria Corkwood tree (*Duboisia*)
Cinnabaris (*Mercurius*) Cotton-root (*Gossypii*)
Cinnamomum (*Cinnamon*) Cowslip (*Caltha*)
op.) Cramp bark (*Viburnum*)

- Cranesbill** (*Geranium*) **Eriodictyon** (*Yerba Santa*)
Crataegus oxyacantha **Erythroxylon coca** (*Coca*)
Creolin **Eserine**
Cresol (*Creolin*) **Ether**
Creosotum **Ethyl**
Crocus (*Saffron*) **Euaine**
Croton Chloral (*Butyl-chloral hydrate*) **Eucalyptol** (*Eucalyptus*)
Cubeba **Eucalyptus**
Cucurbita **Euonymin** (*Euonymus*)
Cud weed (*Guaphalium*) **Euonymus**
Culver's root (*Leptandra*) **Eupatorium**
Cypripedium **Euphorbia**
 "Cystogen" (*Formaldehyde*) **Eupion**
Damiana **Exalgin**
Dandelion (*Taraxacum*) **Fel bovis** (*Oxgall*)
Digitalis **Ferrum**
Dioscorea **Fish berries** (*Cocculus*)
Diuretin **Flag** (*Iris*)
Dock (*Rumex*) **Fleabane** (*Erigeron*)
Drosera **Formaldehyde** and "For-malin"
Duboisine **Fragrant sumach** (*Rhus aromatica*)
Dulcamara **Fraxinus** (*Manna*)
Duotol (*Guaiacol*) **Fringe tree** (*Chionanthus*)
Dusty miller (*Cineraria*) **Fucus vesiculosus**
Echinacea **Gambir**
Elaterinum **Gamboge**
Elder (*Sambucus*) **Gaultheria**
Emplastrum (*Plasters*) **Gelsemium**
Epigaea **Gentianae**
Ergot **Geranium**

Glandulae	suprarenals	Hexamethylenamina
Siccae (Adrenalin)		Hoarhound (<i>Marrubium</i>)
Thyroideae Siccae		Homatropinae
Ginger (Zingiber)		Homoeopathic animal products (See <i>Lachesis</i>)
Ginseng		Homoeopathic organo- therapy (See <i>Lachesis</i>)
Glonoine (Nitroglycerine)		Hop, wild (<i>Bryonia</i>)
Gnaphalium		Hops (<i>Humulus</i>)
Gold		Horse chestnut (<i>Aesculus</i>)
Golden rod (<i>Solidago</i>)		Horse nettle (<i>Solanum</i>)
Golden seal (<i>Hydrastis</i>)		Humulus
Gossypii cortex		Hydrargyrum (Mercury)
Granatum		Hydrastine (<i>Hydrastis</i>)
Graphites		Hydrastis
Grindelia		Hydrogen peroxide
Guaiacol		Hyoscine (<i>Belladonna</i>)
Guaiacolis carbonas (Guai- acol)		Hyoscyamine (<i>Belladon-</i> <i>na</i>)
Guarana		Hyoscyamus
Gum plant (<i>Grindelia</i>)		Hypericum
Hair-cap moss (<i>Polytrichum</i>)		Iberis amara
Hamamelidis		Ichthyol
Haw, black (<i>Viburnum</i> <i>prun.</i>)		Ignatia amara
Hawthorn (<i>Crataegus</i>)		Indian licorice (<i>Jequiriti</i>)
Helleborus niger		Indian tobacco (<i>Lobelia</i>)
Helonias		Indigo
Hemlock, poison (<i>Co-</i> <i>nium</i>)		Indigo, wild (<i>Baptisia</i>)
Hemp, Canadian (<i>Apocy-</i> <i>num</i>)		Inula
Henbane (<i>Hyoscyamus</i>)		Infusions
Hepar sulphuris		Iodine
Heroin		Iodoformum
		Ipecacuanha
		Iridium

INDEX.

- Irisin** (*Iris*)
Iris versicolor
Iron (*Ferrum*)
Jaborandi (*Pilocarpus*)
Jacaranda
Jalapa
Jambul
Jequirity
Jimson weed (*Stramoniun*)
Johambin (*Yohimbinum*)
Juglans
Juniperus
Kali (*Potassium*)
Kalmia Latifolia
Kamala
Kaolinum
Kava-Kava
Kino
Kola
Krameria
Lachesis
Lactucarium
Lady's slipper (*Cypripedium*)
Lapis albus
Lappa
Laurel (*Kalmia*)
Laurocerasus
Lead (*Plumbum*)
Ledum palustre
Leptandra
Leptandrin (*Leptandra*)
Lettuce (*Lactucarium*)
Life root (*Senecio*)
Lilium tigrinum
Lily of the valley (*Convallaria*)
Linimentum
Lippia mexicana
Liquores
Lithii
Lobelia
Logwood (*Haematoxylon*)
Lungwort (*Sticta*)
Lupulinum (*Humulus*)
Lupulus (*Humulus*)
Lycopodium
Lycopus
Lysol (*Creolin*)
Macrotyls (*Cimicifuga*)
Madar bark (*Calotropis*)
Magnesia salts (*Magnesium*)
Magnesium
Male fern (*Aspidium*)
Mallotus (*Kamala*)
Maltum
Manganese
Manna
Mannite (*Manna*)
Marigold (*Calendula*)
Marrubium
Marsh tea (*Ledum*)
Mass
Matico
Matricaria (*Chamomilla*)

- May apple** (*Podophyllum*) **Nickel bromide**
Mentha piperta (*Pepper-mint*) **Nicotiana tabacum**
Mentha viridis **Nitroglycerine**
Menthol **Nutmeg** (*Myristica*)
Mercury **Nux vomica**
Mescale button (*Anhalonium*) **Oat** (*Avena*)
Methylene blue (*Methylthioninae hyd.*) **Oenanthe** (*Cicuta*)
Methylthioninae hydrochloridum **Oenanthe crocata**
Mezereum **Ohio buckeye** (*Aesculus*)
Mistletoe **Oils**
Mitchella repens **Ointments** (*Unguentum*)
Morphina (*Opium*) **Oleates**
Muscarine (*Agaricus*) **Oleum** (*Oils*)
Moschus **Onion** (*Allium*)
Mullein (*Verbascum*) **Opium**
Mullein Oil **Opuntia** (*Cactus*)
Muscarine (*Agaricus*) **Oregon grape** (*Berberis*)
Musk (*Moschus*) **Organo-therapy, Homoeopathic** (*Lachesis*)
Musk root (*Sumbul*) **Oxgall**
Mustard (*Sinapis*) **Paeonia**
Myrica **Palladium**
Myristica **Pale Catechu** (*Gambir*)
Myrrha **Panax** (*Ginseng*)
Myrtle (*Myrtus*) **Pancreatinum**
Myrtus **Papain** (*Papaya*)
Naphthalenum **Papaya**
Natrum (*Sodium*) **Papoid** (*Papaya*)
Nettle (*Urtica*) **Paraldehydum**
New Jersey tea (*Ceanothus*) **Pareira**
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- Partridge berry** (*Mitchella*)
Passiflora
 Passion flower (*Passiflora*)
Peach (*Amygdalus persica*)
Pelletierinae (*Granatum*)
Penthorum
Pepo (*Cucurbita*)
Peppermint
Pepsinum
 Peru, balsam (Balsam Peru)
Petroselinum
 Pheasant's eye (*Adonis*)
Phenacetin
Phenol
 Phenylis salicylas (*Salol*)
Phosphorus
Physostigma
 Physostigmine (*Eserine*)
Phytolacca
 Pilocarpine (*Pilocarpus*)
Pilocarpus
 Pills (*Pilulae*)
Pilulae
Pineapple
 Pink root (*Spigelia*)
 Piper *augustifolium* (*Matico*)
Piperazine
 Piper *methysticum* (*Kava-kava*)
Piperina
 Pipsissewa (*Chimaphila*)
 Pitcher plant (*Sarracenia*)
Pix liquida
Plantago
 Plantain (*Plantago*)
Plasters
Platina
 Pleurisy root (*Asclepias*)
Plumbum
Podophyllum
 Poison hemlock (*Conium*)
 Poison ivy (*Rhus tox.*)
 Poke root (*Phytolacca*)
Polygonum
Polymnia
Polytrichum
 Pomegranate (*Granatum*)
Populus candicans
Potassium salts
 Powders (*Pulveres*)
 Premna (*Tonga*)
 Prickly ash (*Xanthoxylum*)
Prunus virginiana
Ptelea trifoliata
Pulsatilla
Pulveres
 Pussy willow (*Salix nigra*)
Quassia
Quebracho
 Queen's root (*Stillingia*)
Quercus
Quillaja

Quinina	Sanguinaria
Ranunculus bulbosus	Santoninum
Rattlesnake bean (Cedron)	Sapium (Yerba de la flecha)
Red clover (Trifolium)	Sarracenia
Red onion (Allium)	Sarsaparilla
Resorcinol	Sassafras
Rhamnus purshiana (Casca)	Saw palmetto (Sabal)
Rhatany (Krameria)	Savin (Sabina)
Rheum	Scammonium
Rhododendron	Scilla
Rhubarb (Rheum)	Scoparius
Rhus aromatica	Scopolamin (Belladonna)
Rhus Glabra	Scutellaria
Rhus toxicodendron	Senecio
Ribwort (Plantago)	Senega
Ricinus	Senna
Rosin weed (Grindelia)	Sepia
Rubus	Serpentaria
Rumex	Shepherd's purse (Thlaspi)
Sabadilla	Silica (Silicea)
Sabal	Silicea
Sabina	Silico-fluoride of calcium (Lapis albus)
Saccharin	Silver (Argenti)
Saffron	Sinapis
Sage (Salvia)	Skull-cap (Scutellaria)
Salicinum	Smart weed (Polygonum)
Salix nigra aments	Snow rose (Rhododendron)
Salol	Soap bark (Quillaja)
"Salts"	Sodium salts
Salvia	Solanum
Sambucus canadensis	
Sambucus nigra	

- Solidago** Sumach (Ailanthus and rhus)
Sparteinae sulphas Sumbul
Spearmint (Mentha viridis) Sundew (Drosera)
Spigelia Sweet clover (Melilotus)
Spirits Syrups
Sponge, roasted (Spongia) Syzygium (Jambul)
Spongia tosta Tag alder (Alnus)
Spurge olive (Mezereum) Tanacetum
Spurred rye (Ergot) Tansy (Tanacetum)
Squaw vine (Mitchella) Tar (Pix liquida)
Squill (Scilla) Taraxacum
Stannum Tartar emetic (Antimonii et P. T.)
Staphisagria Terebenum
 Star grass (Aletris) Terebinthinae
 Starwort (Helonias) Terpini hydras
 Stavesacre (Staphisagria) Theobromine
Sticta pulmonaria Thlaspi bursa pastoris
 Stigmata maydis (Zea) Thornapple (Stramonium)
Stillingia Thuja
 St. John's wort (Hypericum) Thymol
 Stone root (Collinsonia) Thymolis iodidum (Aristolochia)
 Stramonium Tiger lily (Lilium tigrinum)
Strontii bromidum Tin (Stannum)
Strophanthinum Tobacco (Nicotiana)
Strophanthus Tomato (Solanum)
Strychnina Tonga
 Sulphomethylmethanum (Trional) Tongo
 Sulphonmethanum (Sulfonal) Tonka (Tongo)
Sulfonal Trailing arbutus (Epigaea)
Sulphur

- Trifolium** Virginia stonecrop (Pen-thorum)
Trional Viscum album (Mistletoe)
Triticum Water ash (Ptelea)
Triturationes Wahoo (Eunonymus)
Trochisci Water dropwort (Oenan-the)
Tuberculin **Waters, medicated**
Turnera (Damiana) White arsenic (Arseni-trioxidum)
Turpentine (Terebinthinae) White hellebore (Veratrum album)
Unguentum White oak (Quercus)
Upas Wild cherry (Prunus virg.)
Uranium nitrate Wild hop (Bryonia)
Urethane Wild indigo (Baptisia)
Urotropin (Formaldehyde) Wild yam (Dioscorea)
Urtica Willow-buds (Salix nigra aments)
Ustilago Wind flower (Pulsatilla)
Uva ursi Wintergreen (Gaultheria)
Valeriana Witch hazel (Hamamelidis)
Veratrina **Xanthium**
Veratrum album **Xanthoxylum**
Veratrum (U. S. P.) Yam, wild (Dioscorea)
Veratrum viride Yellow melilot (Melilotus)
Verbascum **Yerba de la flecha**
Verbena **Yerba santa**
Vervain (Verbena) **Yohimbinum**
Viburnum opulus **Zea**
Viburnum prunifolium **Zinc Salts**
Vinum **Zingiber**
Viola
Violet (Viola)
Viper virus (Lachesis)
Virginia snakeroot (Serpentaria)

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